



Malaysian Society of
Gastroenterology & Hepatology

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“NEW BEGINNING
NEW SCIENCE”



Annual Scientific Meeting of **MSGH**

GUT 2022

19th to 21st August 2022

Kuala Lumpur Convention Centre
Kuala Lumpur, Malaysia

www.msgh.org.my

MSGH BULLETIN 2022 SUPPLEMENT

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MSGH EXECUTIVE COMMITTEE 2021-2023

President	Professor Dr Lee Yeong Yeh
President-Elect	Datuk Dr Raman Muthukaruppan
Immediate Past President	Professor Dr Raja Affendi Raja Ali
Honorary Secretary	Dr Haniza Omar
Honorary Treasurer	Dr Sattian Kollanavelu
Executive Committee Members	Professor Dr Ida Normiha Hilmi Datuk Dr Jayaram Menon Dato' Dr Mahendra Raj Dr Nik Razima Wan Ibrahim Datuk Dr Ryan Ponnudurai
Coopted Executive Committee Members	Dr Abraham Mathew George Dr Soon Su Yang Dr Tan Soek Siam Dr Alex Leow Hwong Ruey

ORGANISING COMMITTEE

Chair, Organising Committee & Chair, Scientific Committee	Professor Dr Lee Yeong Yeh
Co-Chair, Organising Committee	Datuk Dr Raman Muthukaruppan
Co-Chair, Scientific Committee	Dr Haniza Omar
Committee Members	Professor Dr Raja Affendi Raja Ali Dr Sattian Kollanavelu Datuk Dr Jayaram Menon Datuk Dr Ryan Ponnudurai Dato' Dr Mahendra Raj Professor Dr Ida Normiha Hilmi Dr Nik Razima Wan Ibrahim Dr Abraham Matthew George Dr Soon Su Yang Dr Tan Soek Siam Dr Alex Leow Hwong Ruey

MESSAGE



Dear Colleagues, Friends and Biomedical Industry Partners

The Organising Committee of **GUT 2022** with the theme “**New Beginning, New Science**” welcomes you to join us on **19th to 21st August 2022** at the **Kuala Lumpur Convention Centre (KLCC)** for the Annual Scientific Meeting of the Malaysian Society of Gastroenterology and Hepatology (MSGH). This year marks a New Beginning post-pandemic, and there are many New Sciences in the field, thus the theme for GUT 2022. As we transit into the ‘old normal’ post-pandemic, we have decided to hold GUT 2022 as a fully physical meeting to enable interaction and the bonding of fellowship and camaraderie which will not be possible with a virtual event.

The scientific highlights and sessions will all be recorded and will be made available to registered participants for a limited period after the meeting. The scientific content will not only feature the latest sciences highly relevant to clinical practice but also clinical topics tailored for busy clinicians. Essentially, the programme is designed for everyone with an interest in gut health including primary care practitioners, family physicians, scientists, surgeons, general physicians and gastroenterologists. As a regular feature, the meeting also welcome submissions of high-quality research papers and authors will stand a chance to win our prestigious Young Investigator Awards. In addition, we will have our industry partners at their physical booths welcoming you to their latest offerings in innovative products and other latest information.

I hope to meet up with you in-person.



Professor Dr Lee Yeong Yeh
President, MSGH 2021-2023 &
Organising Chair GUT 2022

22ND MSGH ORATION

PROFESSOR DR GOVIND K MAKHARIA

Citation by Professor Dr Ida Normiha Hilmi



“Celiac Disease: Opportunities and Challenges”

Professor Dr Govind K Makharia is a Professor in the Department of Gastroenterology and Human Nutrition, All India Institute of Medical Sciences, New Delhi, India. He received his training from the prestigious Postgraduate Institute of Medical Education and Research, Chandigarh, India. He has trained 96 fellows in gastroenterology and nine PhD students. He has published 305 articles in indexed journals, 42 book chapters and edited a handbook on celiac disease. He has a h-index of 52 and his publications have been cited 11,000 times. He has been listed amongst the top two percent of research scientists globally (2021).

Professor Dr Makharia holds many important positions including being the Secretary General of the Indian Society of Gastroenterology; Chair of the Clinical Research Committee, World Gastroenterology Organization; Governing Council Member of the World Gastroenterology Organization; Council Member of the Asian Pacific Association of Gastroenterology and Coordinator of the DBT Consortium on Celiac Disease. In addition to this, he is also the co-inventor of a device for fecal incontinence and a liver biopsy needle (Bioscoop).

Professor Dr Makharia has received many awards including the BMJ South-East Asia Research Paper of the Year Award in 2016, ISG Om Prakash Memorial Award, ISG-Zydus Oration, SR Naik Memorial Award and AIIMS Excellence Awards. He has successfully organised a Young Clinician Programme for the last 11 years involving approximately 900 GI trainees and the first Train-the-Trainers programme on behalf of the Indian Society of Gastroenterology. He has initiated and participated in the development of many global, Asian and Indian practice guidelines on various diseases. His main area of research is Celiac Disease.

In terms of his personal life, Professor Dr Makharia is the loving son to Shyam Lal Makharia and Savitri Makharia and has been blessed with a lovely wife, Dr Suman Lal, who is an obstetrician and gynaecologist. They have a beautiful daughter who is also a doctor; Dr Archita Makharia. He recently expanded his family with Dr Archita's recent marriage with Dr Archit Gupta who is a GI surgeon. His interests outside medicine include travel and music.

Although his illustrious academic career is self-evident, a truly distinguishing feature of Professor Dr Makharia is his warmth, generosity and absolute dedication to patient care and teaching. His lectures have always been outstanding, and I have learned greatly from him over the years; as have a multitude of others. I cannot think of anyone more deserving to present this year's 22nd MSGH Oration; Celiac Disease: Opportunities and Challenges.

19TH PANIR CHELVAM MEMORIAL LECTURE

PROFESSOR DR JUSTIN CHE-YUEN WU

Citation by Professor Dr Lee Yeong Yeh



“Functional GI Disorders in Asia: The Past and the Future”

Dr Panir Chelvam, was known for being highly successful in his gastroenterology practice but also a caring family man and a kind friend. Professor Dr Justin Wu fits a similar personality. Having known him for several years now, and from a couple of working opportunities with him, I am greatly delighted to read his citation today.

Professor Dr Justin Wu graduated from the Chinese University of Hong Kong (CUHK) with Distinction in Medicine in 1993. He then underwent internal medicine and gastroenterology training under the supervision of Professor Dr Joseph Sung, much regarded as his close mentor and a friend. With his deep interest in GI motility, he later pursued further training at the Royal Adelaide Hospital under the supervision of Professor Dr John Dent and Professor Dr Richard Holloway in the year 2000.

Professor Dr Justin Wu joined CUHK as an Associate Professor in 2006 and was then promoted to Professor just three years later. During his tenure, he has academic and clinical focus in the field of functional GI disorder (now termed disorders of gut-brain interactions or DGBIs) and gastroesophageal reflux disease with over 300 publications in top medical journals including the New England Journal of Medicine, Lancet and Gastroenterology with H-index above 50. He is a current member of the Working Group of Chicago Classification for esophageal motility disorders.

Professor Dr Justin Wu held several key leadership positions in many local and international professional organizations. He is the current President of the Asian Pacific Association of Gastroenterology (APAGE), Past President of Hong Kong Society of Gastroenterology (HKSGE), President of APDW 2017, and the Scientific Committee Chairman of Asia Neurogastroenterology and Motility Association (ANMA). He has served as the managing director of Journal of Gastroenterology and Hepatology (JGH), and International Associate Editor of American Journal of Gastroenterology (AJG).

As the Associate Dean (Health Systems) of Faculty of Medicine and the Chairman of CUHK Medical Services, he is responsible for development of collaborative network with private health systems, businesses and industry partners in Hong Kong, Greater Bay Area and beyond. He is former Chief Operating Officer of CUHK Medical Centre, the private teaching hospital of CUHK; the founding director of Asia's first “Global Physician-Leadership Stream” (GPS) of MBChB programme; and the founding director of Hong Kong Institute of Integrative Medicine with the mission of fostering cooperation between Western and Chinese medicine in the health system.

Having a pleasant personality, it is not surprising that Professor Dr Justin Wu is an eminent teacher with eight teaching awards of medical education included the Vice-Chancellor Exemplary Teaching Award, Master Teacher, and Teacher of the Year Awards in CUHK Medicine. He has also actively contributed to the development of medical innovations in Hong Kong. He is serving as director and advisor of numerous biomedical technology companies and investment funds.

Last but not least, he is a caring father who will spend any available time out of his busy schedule with his daughter, Jasmine. There is no doubt that his success is not possible without his supportive spouse, Lily Heung. His outstanding academic achievement, exemplary leadership qualities and continuous pursuit of innovations have brought significant contributions to the field of gastroenterology. We are truly honoured to have Professor Dr Justin Wu to deliver the 19th Panir Chelvam memorial lecture.

PROGRAMME SUMMARY

Time	Date	19 th August 2022 (Friday)	20 th August 2022 (Saturday)	21 st August 2022 (Sunday)
0830 - 0900		SYMPOSIUM 1 The MSGH Consensus Statements on MAFLD	SYMPOSIUM 3 Inflammatory Bowel Disease	SYMPOSIUM 6 New Science Series 2: Joint WGO-MSGH Symposium - Green GI Practices and Planetary Health
0900 - 0930				
0930 - 1000				
1000 - 1030		LECTURE 1 22 nd MSGH Oration	LECTURE 2 19 th Panir Chelvam Memorial Lecture	LECTURE 3
1030 - 1100		Break		
1100 - 1130		Young Investigator Award 1 Best Oral Paper Presentations	SYMPOSIUM 4 Chronic Hepatitis B: New Treatment Paradigm	Tea Satellite Symposium 3
1130 - 1200				SYMPOSIUM 7 Grand Round Series 2: Overlap Functional GI Disorders
1200 - 1230				
1230 - 1300		Lunch Satellite Symposium 1	Lunch Satellite Symposium 2	CLOSING CEREMONY
1300 - 1330				
1330 - 1400		Break / Friday Prayers	Young Investigator Award 2 & Best E-Poster Award Presentations Graduation Ceremony	
1400 - 1430				
1430 - 1500		SYMPOSIUM 2 New Science Series 1: Latest Science in Gut Microbiota	SYMPOSIUM 5 Grand Round Series 1 (Joint Session with PRO-EURO DILI Network): Drug Induced Liver Injury	
1500 - 1530				
1530 - 1600				
1600 - 1630		Break		
1630 - 1700		Tea Satellite Symposium 1	Tea Satellite Symposium 2	
1700 - 1800				
1900 - 1930		OPENING CEREMONY Opening of Exhibition & Launching of MSGH Website	MSGH Annual General Meeting	
1930 - 2200		APPRECIATION DINNER FOR GUT 2022 & APDW 2021 <i>(By Invitation Only)</i>		

DAILY PROGRAMME

19th August 2022 (Friday)

Conference Hall 3

0830 - 1000

SYMPOSIUM 1 | The MSGH Consensus Statements on MAFLD

Chairpersons: *Haniza Omar / Chan Wah Kheong*

Introduction

Chan Wah Kheong (Malaysia)

Assessment and Referral Pathway for Metabolic Dysfunction Associated Liver Disease (MAFLD)

Tan Soek Siam (Malaysia)

Current and Emerging Therapy in MAFLD

Vincent Wai-Sun Wong (Hong Kong)

Improving Metabolic Outcomes in MAFLD

Chan Siew Pheng (Malaysia)

Role of Primary Care in the Management of MAFLD

Anis Safura Ramli (Malaysia)

MAFLD - A Public Health Perspective

Feisul Mustapha (Malaysia)

Q&A

1000 - 1030

LECTURE 1

22nd MSGH Oration

Citation: Ida Normiha Hilmi

Celiac Disease: Opportunities and Challenges

Govind K Makharia (India)

1030 - 1100

Break

1100 - 1230

Young Investigator Award 1

Best Oral Paper Presentations

DAILY PROGRAMME

19th August 2022 (Friday)

Conference Hall 3

1230 - 1330

Lunch Satellite Symposium 1 (Abbott)

Chairperson: *Alex Leow Hwong Ruey*

An Extensive Approach to Manage Overlapping FGID Symptoms (Virtual)

Tim Vanuytsel (Belgium)

Expert Dialogue Session: Addressing Cultural Gaps in Treating FD-GERD (Virtual)

Tim Vanuytsel (Belgium)

Q&A

1330 - 1430

Break / Friday Prayers

1430 - 1600

SYMPOSIUM 2 | New Science Series 1: Latest Science in Gut Microbiota

Chairpersons: *Mahendra Raj / Raman Muthukaruppan*

Gut Microbiota Dysbiosis in COVID-19: Epiphenomenon or a Meaningful Association?

Uday C Ghoshal (India)

Gut Microbiota in Colorectal Cancer

Wei Shu-Chen (Taiwan)

H. pylori and Gastric Cancer

Hidekazu Suzuki (Japan)

Fecal Microbiota Transplantation

David Ong Eng Hui (Singapore)

Q&A

1600 - 1630

Break

DAILY PROGRAMME

19th August 2022 (Friday)

Conference Hall 3

1630 - 1800

Tea Satellite Symposium 1

Chairperson: *Goh Khean Lee*

The Evolving Face of Reflux-Like Symptoms & Its Management (**Reckitt**)

Peter James Kahrilas (United States)

Chairperson: *Goh Khean Lee*

The Latest ACG Clinical Guideline for Diagnosis and Management of GERD (**AstraZeneca**)

Lawrence Ho Khek Yu (Singapore)

Chairpersons: *Ida Normiha Hilmi / Lee Yeong Yeh*

IBD Monitoring Reimagined: Innovation in IBD Care (Ferring)

Alex Leow Hwong Ruey (Malaysia)

1900 - 1930

OPENING CEREMONY

Exhibition Hall

- Opening of Exhibition

- Launching of MSGH Website

- IBD Preceptorship & IBD App

1930 - 2200

APPRECIATION DINNER FOR GUT 2022 & APDW 2021 (*By Invitation Only*)

Mandarin Oriental Hotel

DAILY PROGRAMME

20th August 2022 (Saturday)

Conference Hall 3

0830 - 1000

SYMPOSIUM 3 | Inflammatory Bowel Disease

Chairpersons: *Ida Normiha Hilmi / Raman Muthukaruppan*

COVID19 and IBD - What have we Learned so Far?

Gilaad G Kaplan (Canada)

Isolated Ileocecal Crohn's Disease: Is it Time to Swing the Pendulum Back to Surgery?

Yes: *Khong Tak Loon (Malaysia)*

No: *Govind K Makharia (India)*

Case 1: How to Position Small Molecules and Biologics in IBD?

Nazri Mustaffa (Malaysia)

Case 2: Management of Acute Severe Colitis

Nik Razima Wan Ibrahim (Malaysia)

Q&A

1000 - 1030

LECTURE 2

19th Panir Chelvam Memorial Lecture

Citation: *Lee Yeong Yeh*

Functional GI Disorders in Asia: The Past and the Future

Justin Che-Yuen Wu (Hong Kong)

1030 - 1100

Break

1100 - 1230

SYMPOSIUM 4 | Chronic Hepatitis B: New Treatment Paradigm

Chairpersons: *Haniza Omar / Sattian Kollanthavelu*

Can we do More with Current HBV Treatment with Nucleoside Analogues?

Vincent Wai-Sun Wong (Hong Kong)

Debatable Among Global Hepatitis B Guidelines: How do we Manage Patients?

Teerha Piratvisuth (Thailand)

An Overview of Emerging Therapies for Functional Cure

Lim Seng Gee (Singapore)

Asian Pacific Association for the Study of Liver (APASL) Guidelines: Hepatitis B Virus in Pregnancy

Manoj Kumar Sharma (India)

Q&A

DAILY PROGRAMME

20th August 2022 (Saturday)

Conference Hall 3

1230 - 1330

Lunch Satellite Symposium 2 (Takeda)

Chairperson: *Raja Affendi Raja Ali*

Are we doing Enough in Treating GERD?

Daphne Ang Shih Wen (Singapore)

Paving the Way Towards Disease Modification in Crohn's Disease

Wei Shu-Chen (Taiwan)

Q&A

1330 - 1430

Young Investigator Award 2 & Best E-Poster Award Presentations Graduation Ceremony

1430 - 1600

SYMPOSIUM 5 | Grand Round Series 1 (Joint Session with PRO-EURO DILI Network): Drug Induced Liver Injury

Chairpersons: *Tan Soek Siam / Jayaram Menon*

Introduction to PRO-EURO-DILI Network

Raul J Andrade (Spain)

Approach and Management of DILI in Real-Life Practice - The Asian Experience

Harshad Devarbhavi (India)

Approach and Management of DILI in Real-Life Practice - The European Experience

Raul J Andrade (Spain)

Case 1: COVID-19 Vaccine Induced Liver Injury

Hoo Chai Zhen (Malaysia)

Case 2: Immunotherapy-Associated Liver Injury

Raul J Andrade (Spain)

Q&A

1600 - 1630

Break

DAILY PROGRAMME

20th August 2022 (Saturday)

Conference Hall 3

1630 - 1800

Tea Satellite Symposium 2

Chairperson: *Lee Yeong Yeh*

The Impact of Antibiotics on the Gut Microbiota and Role of Probiotic (**Servier**)

Kok-Ann Gwee (Singapore)

Chairperson: *Lee Yeong Yeh*

Define and Optimize the Role of Lenvatinib in HCC Management (**Eisai**)

Teerha Piratvisuth (Thailand)

Chairperson: *Chan Wah Kheong*

Mounting Evidence with Immunotherapy in Unresectable HCC (**Roche**)

Lim Seng Gee (Singapore)

1800 - 1900

MSGH Annual General Meeting

DAILY PROGRAMME

21st August 2022 (Sunday)

Conference Hall 3

0830 - 1000

SYMPOSIUM 6 | *New Science Series 2: Joint WGO-MSGH Symposium - Green GI Practices and Planetary Health*

Chairpersons: *Jayaram Menon / Abraham Mathew George*

The Global Gastroenterology Community to Meet the Challenge of Climate Change
Geoffrey Metz (Australia)

Discussion Forum:

Chairperson: *Abraham Mathew George*

Moderators: *Jayaram Menon / Raja Affendi Raja Ali*

Green Endoscopy

Andrew Veitch (United Kingdom)

GI Society Survey

Desmond Leddin (Canada)

GI Carbon Footprint

Geoffrey Metz (Australia)

Moving Forward

Bishr Omary

Discussion / Q&A

1000 - 1030

LECTURE 3 (*Johnson & Johnson*)

Chairperson: *Raja Affendi Raja Ali*

Stages of Global Evolution of Inflammatory Bowel Disease
Gilaad G Kaplan (Canada)

1030 - 1100

Break

1100 - 1130

Tea Satellite Symposium 3 (*Johnson & Johnson*)

Chairperson: *Abraham Mathew George*

Real World Effectiveness and Safety of Ustekinumab in IBD
Ooi Choon Jin (Singapore)

DAILY PROGRAMME

21st August 2022 (Sunday)

Conference Hall 3

1130 - 1300

SYMPOSIUM 7 | Grand Round Series 2: Overlap Functional GI Disorders

Chairpersons: *Soon Su Yang / Lee Yeong Yeh*

How do I Approach Overlap Functional GI Disorders in Practice?

Justin Che-Yuen Wu (Hong Kong)

Case 1: FD-GERD

Hidekazu Suzuki (Japan)

Case 2: FD-IBS

Kok-Ann Gwee (Singapore)

Case 3: FD-Pancreatic Dysfunction

Seiji Futagami (Japan)

Case 4: FD-Constipation

Uday C Ghoshal (India)

Q&A

1300 - 1330

CLOSING CEREMONY

- Award Presentation

- Lucky Draw

MODERATORS / CHAIRPERSONS

Abraham Matthew George

KPJ Johor Specialist Hospital
Johor

Chan Wah Kheong

University Malaya Medical Centre
Kuala Lumpur

Goh Khean Lee

Universiti Malaya and CENGILD Medical Centre
Kuala Lumpur

Haniza Omar

Selayang Hospital
Selangor

Ida Normiha Hilmi

University Malaya Medical Centre
Kuala Lumpur

Jayaram Menon

Pantai Hospital Ayer Keroh
Melaka

Lee Yeong Yeh

Hospital Universiti Sains Malaysia
Kubang Kerian, Kelantan

Alex Leow Hwong Ruey

Pantai Hospital Kuala Lumpur
Kuala Lumpur

Mahendra Raj

Pantai Hospital Kuala Lumpur
Kuala Lumpur

Raja Affendi Raja Ali

Universiti Kebangsaan Malaysia Medical Centre
Kuala Lumpur

Raman Muthukaruppan

Hospital Queen Elizabeth
Kota Kinabalu, Sabah

Sattian Kollanthavelu

Tuanku Ja'afar Hospital Seremban
Negeri Sembilan

Soon Su Yang

KPJ Kuching Specialist Hospital
Sarawak

Tan Soek Siam

Selayang Hospital
Selangor

FACULTY BIODATA



Raul J Andrade

Professor Dr Raul J Andrade is Professor of Medicine and Director of the Department of Medicine at the University of Malaga, Head of the Gastroenterology Service, University Hospital. He is the Founder and Director of the Spanish Drug Induced Liver Injury Registry (www.spanishdili.uma.es) of the Spanish Latin-American DILI Network and the Prospective European DILI Registry awarded by the EASL. He is Chairman of the EASL Clinical Practice Guidelines on Drug Induced Liver Injury; Chair of CIOMS (Council for International Organizations of Medical Sciences) working group on DILI 2017; Chair COST ACTION CA17112; Member of the Steering Committee of SIG in Hepatotoxicity (AASLD) and the expert panel of the EFSA. Invited speaker in over 50 international Conferences. Professor Dr Andrade is Associate Editor of Liver International (Q1) and Frontiers in Pharmacology (Q1) and member of the editorial board of Hepatology (2012-2016) (D1) and Journal of Hepatology (D1) (2020-2023). He published over 300 articles in peer-review journals, and 43 book chapters. He has an h-index of 52 and 12602 total citations by 8143 documents. The AASLD elected him Fellow (2016) for his significant contribution to the science and practice of hepatobiliary diseases.



Daphne Ang Shih Wen

Dr Daphne Ang graduated with MBBS (Honours) from the University of New South Wales (Australia) in 1999 and subsequently returned to Singapore where she underwent further training in internal medicine and gastroenterology.

After obtaining her MRCP (UK) in 2003 and specialist accreditation in gastroenterology in 2006, she was awarded the HMDP scholarship by the Ministry of Health to pursue subspecialty training in neurogastroenterology in Belgium and Zurich. Her areas of interest include gastroesophageal reflux disease and GI motility disorders. She is regularly invited to speak at international scientific meetings. She has published in both local and international journals, book chapters and conducts workshops on oesophageal motility.



Anis Safura Ramli

Professor Dr Anis Safura Ramli is currently the Deputy Director and Principal Fellow at I-PPerForM, a research Centre of Excellence (CoE) in UiTM. Her research niche area is in cardiovascular disease (CVD) prevention and management of multiple cardiovascular risks - particularly hypertension, diabetes, hypercholesterolaemia, obesity and metabolic syndrome. She has published numerous scientific research papers in international high impact journals. Her Scopus h-indexed is 15. She has vast experience in leading research team as a principal investigator of national and international grants. She has won several research and innovation awards at national and international levels, including UiTM Best Researcher Award 2020 and Gold Medal Award at ITEX 2021. She is an active member of her profession having served in the councils of the Academy of Family Physicians of Malaysia (AFPM), Family Medicine Specialist Association (FMSA) and the Malaysian Society of Hypertension (MSH). She has been invited as a plenary and symposium speaker at various national and international scientific conferences.

FACULTY BIODATA



Chan Siew Pheng

Dr Chan Siew Pheng graduated from Universiti Malaya, Kuala Lumpur. She is a Consultant Endocrinologist, currently holding an Honorary Professorship at the Department of Medicine, Universiti Malaya, Kuala Lumpur, Malaysia. She also practices at Subang Jaya Medical Centre, Selangor, Malaysia.

As an academican, she has conducted research in the field of Diabetes, Endocrinology and Osteoporosis. She was the Chairperson of the 2020 Malaysian Clinical Practice guidelines for Management of Type 2 Diabetes mellitus. She continues to actively publish in international and regional journals. She is the current President of the Malaysian Endocrine and Metabolic Society (2020-2022).



Chan Wah Kheong

Professor Dr Chan is Professor of Medicine at the Universiti Malaya and Senior Consultant Gastroenterologist and Hepatologist at the University Malaya Medical Centre and the University of Malaya Specialist Centre. He is a member of the Academy of Medicine of Malaysia, the Malaysian Society of Gastroenterology and Hepatology, and the American Association for the Study of Liver Diseases. He was the Scientific Co-Chair for the Asia Pacific Digestive Week 2021. He is a member of the Asia-Pacific Working Party on Non-Alcoholic Fatty Liver Disease, the Gut and Obesity in Asia (GO ASIA) Workgroup, the CAP Prognosis Study Group, and the Global NASH Council. He is Associate Editor for the Journal of Gastroenterology and Hepatology, a member of the Editorial Board for Clinical and Molecular Hepatology and is a reviewer for several international journals. He has published numerous full papers in peer-reviewed journals and presented in both local and international conferences. His main area of research interest is metabolic dysfunction associated fatty liver disease.



Feisul Mustapha

Dr Feisul Mustapha is a consultant public health physician best known for his leadership in the prevention and control of non-communicable diseases (NCDs) in Malaysia. His special areas of interest include diabetes, cardiovascular diseases, cancers and obesity. At the Ministry of Health Malaysia, he is the Deputy Director (NCDs) at the Disease Control Division, and his main roles include policy and programme development, and strategic implementation of interventions for the prevention and control of NCDs. In addition, Dr Feisul has special interest in leveraging on technology in catalysing behavioural modification to reduce the exposure to NCD risk factors.

He combines his high-level experiences in the government with active engagement of civil society and multilateral institutions. Dr Feisul is currently Chair of the Scientific Advisory Group for the Monash University South East Asia Community Observatory (SEACO). In addition, he is a Board Member for the Advisory Board of the United Nations University International Institute for Global Health (UNU-IIGH), a Member of the Strategic and Technical Advisory Group on the Prevention and Control of NCDs (STAG-NCD) for WHO Geneva, and also a Member of the Policy Advisory Group of the World Cancer Research Fund International (WCRF).

FACULTY BIODATA



Seiji Futagami

Professor Dr Seiji Futagami graduated from Nippon Medical School in 1990. His interests include subject matter on Functional Gastrointestinal Disorders, Functional Dyspepsia and Chronic Pancreatitis. He has co-authored many publications related to this. Professor Dr Seiji Futagami is an outstanding researcher and has won multiple awards including JGES Awards in 1999, JSGE Awards in 2009 and JGA Awards in 2010. Currently he holds the position as Chief of Division of Gastroenterology of Nippon Medical School as well as Vice President of Nippon Medical School Musashi Kosugi Hospital Kanagawa, Japan.



Govind K Makharia

Professor Dr Govind K Makharia is presently a Professor in the Department of Gastroenterology and Human Nutrition, All India Institute of Medical Sciences, New Delhi, India. He has received his training from prestigious Postgraduate Institute of Medical Education and Research, Chandigarh. He has trained 96 fellows in gastroenterology and 9 PhD students. He has published 305 articles in the indexed journals, 42 chapters for different books and edited a handbook on celiac disease. The h-index of his publications is 52 and his publications has been cited by 11,000 times. He has been listed amongst the top two percent research scientist globally (2021).

Professor Dr Govind Makharia is the Secretary General of the Indian Society of Gastroenterology; Chair, Clinical Research Committee, World Gastroenterology Organization; Governing Council Member of World Gastroenterology Organization; Council Member of Asian Pacific Association of Gastroenterology; Coordinator, DBT Consortium on Celiac Disease; Co-inventor of a device for fecal incontinence and a liver biopsy needle (Bioscoop). He has received many awards including BMJ South-East Asia research paper of the year award 2016, ISG Om Prakash Memorial award, ISG-Zydus oration, SR Naik Memorial award, and AIIMS Excellence Awards (three times). He has successfully organized Young Clinician Programme for the past 11 years involving approximately 900 GI trainees and the first Train-the-Trainers programme on behalf of Indian Society of Gastroenterology. He is initiator and participants in development of many global, Asian and Indian practice guidelines on various diseases. The main area of his research is Celiac disease.



Kok-Ann Gwee

Professor Dr Kok-Ann Gwee, MBBS, MRCP, PhD, is Adjunct Associate Professor of Medicine at the National University of Singapore, and Consultant Gastroenterologist at Gleneagles Hospital, Singapore. He obtained his PhD from University of Sheffield for his thesis on Post-infection IBS. His research includes epidemiology and Asian socio-cultural perspectives of GI diseases, and the roles of inflammation, gut microbes, probiotics, sleep disturbance and psychological factors in FGID. A founding member and past president of the ANMA, Professor Dr Gwee was a member of the Rome IV committees. He is leading an APAGE working team to develop guidelines for the management of overlapping FGID.

FACULTY BIODATA



Harshad Devarbhavi

Professor Dr Harshad Devarbhavi started his medical training in Belgaum, India. He then pursued the specialty of Internal medicine in Madras Medical College, Chennai, India. He then subspecialized in Gastroenterology in LTMMC, Mumbai, India. He has also completed Advanced Fellowship in Hepatology & Liver Transplantation at the Mayo Clinic, USA in 2004. His interests are in the area of DILI, Wilson Disease, ALF, ACLF and Pregnancy Specific Liver Disease and has multiple publications related to this topics.

Professor Dr Devarbhavi is Professor of Gastroenterology at St. John's Medical College and Hospital, Bangalore, India where he has been the Head of the Department of Gastroenterology and Hepatology since November 2005. He is in the editorial board of Hepatology International, Hepatology Communications and an Associate Editor of Journal of Clinical and Experimental Hepatology (JCEH). He is also an active member of Member AASLD, AGA, INASL, ISG and MNAMS.



Lawrence Ho Khek Yu

Professor Dr Lawrence Ho is Professor of Medicine, National University of Singapore; Senior Consultant, National University Hospital; and Director, Centre for Innovation in Healthcare, National University Health System.

Besides being an accomplished endoscopist who has been invited to perform live case demonstrations in numerous international endoscopy workshops, he is an established international key opinion leader, being conferred the honorary International Life Membership of the Society of Gastrointestinal Endoscopy of India in 2013. He was made Fellow of the Japan Gastroenterological Endoscopy Society in 2019, to recognise his significant contributions to the field of gastrointestinal endoscopy.

Experienced in spearheading collaboration between experts in Asia, he was elected as the Founding Chair of the Asian Endoscopic Ultrasound Group (AEG) in 2012. AEG is one of the most successful interest groups dedicated to endoscopic ultrasound training and professional development of endosonographers in Asia. He is also recognised internationally as an authority in Barrett's esophagus. Because of his expertise in this field, he was appointed by the U.S. National Cancer Institute as the Founding Chair of Asian Barrett's Consortium (ABC) in 2008. The ABC aimed to bring together Asian experts in gastroesophageal reflux disease to understand Barrett's esophagus and its related cancer in Asia. He was also the Co-Chair, Education Committee, International Society for Diseases of the Esophagus in 2019. With the emergence of obesity in Asia, the Gut & Obesity in Asia ("Go Asia") Workgroup was established under the auspices of the Asia Pacific Association of Gastroenterology in 2015, to study relationship between obesity, gut and liver, and he was its Founding Co-Chair.

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A proven clinician innovator and experienced entrepreneur, he co-invented the ground-breaking technology of the Master and Slave Transluminal Endoscopic Robot (MASTER), which was used to successfully perform the World's first robotic endoscopic resection of gastric tumor in human patients. The product has since been spun-off into the start-up, Endomaster Pte Ltd. He also founded two other start-up companies, Endofotonics Pie Ltd, a molecular AI based realtime diagnostic system, and Endopil Pte Ltd, an ingestible weight loss balloon capsule. He received the Singapore President's Technology Award in 2012. He has held 6 US-granted patents in medtech products.

As Professor of Medicine, he has continued to be academically productive. To date, he has published more than 270 peer-reviewed papers (H index Google Scholar, 65; Scopus, 50), more than 15 book chapters, and co-edited 4 books. His regional standing as an academic leader is exemplified by invitation as Orators in the Nihal Marcus Memorial Oration (Sri Lanka Gastroenterological Association, 2012), Francisco Roman Memorial Lecture (Joint Annual Convention of the Philippine Society of Gastroenterology and Philippine Society of Digestive Endoscopy, 2013), Macau Society of Digestive Endoscopy Lecture (2013), and Panir Chelvam Memorial Lecture (Malaysian Society of Gastroenterology & Hepatology, 2017). In 2010, He was conferred the Journal of Gastroenterology and Hepatology Foundation Emerging Leadership lecturer in Asia Pacific Digestive Week. He was also appointed visiting professors and consultants in many regional institutions.

He is the immediate past Vice Dean (Research), School of Medicine, National University of Singapore. He was President of Gastroenterological Society of Singapore in 2005. In recognition of his outstanding contributions to the medical profession as a leading expert, the Ministry of Health Singapore awarded him the prestigious Distinguished Senior Clinician award 2017. He was conferred the National Day Award 2017, Public Administration Medal (Bronze), for his distinguished service to public administration.



Hoo Chai Zhen

Dr Hoo Chai Zhen, graduated in 2011 with MB BCh BAO (NUI) and BMedSci from Penang Medical College. After obtaining MRCP (UK), she began her career as a physician in 2016. In 2019, she joined subspeciality training in Hepatology and Gastroenterology in Kuala Lumpur Hospital and subsequently in Selayang Hospital and is now a final year fellow. She is a budding hepatologist and is a keen learner.

FACULTY BIODATA



Peter James Kahrilas

Professor Dr Peter J Kahrilas is the Gilbert H. Marquardt Professor in Medicine at Northwestern University's Feinberg School of Medicine in Chicago, USA, where he has worked since 1986. His research is on esophageal pathophysiology, on which he has published more than 450 original papers. He has done extensive editorial work and is or has been on the editorial boards of *Gastroenterology*, *CGH*, *GUT*, *AJP*, *NGM*, and *AJG*. He has served on the AGA Council and Governing Board, as president of the International Society for Diseases of the Esophagus, and is currently president of the American Foregut Society. He was elected to the American Society for Clinical Investigation in 1998 and the Association of American Physicians in 2015. He was the recipient of the William Beaumont Prize for lifetime achievement in academic gastroenterology from the American Gastroenterological Association in 2020.



Gilaad G Kaplan

Professor Dr Kaplan is a Professor in the Cumming School of Medicine at the University of Calgary. He is a gastroenterologist who is internationally renowned for studying the global epidemiology of IBD. He is the past chair of the Scientific and Medical Advisory Counsel of Crohn's and Colitis Canada, as well as the co-chair of the National COVID-19 and IBD Task Force. He is an Associate Editor of *Gastroenterology* (Impact Factor 23, 2020). In 2019, Dr Kaplan was elected to the International Organization of the Study of IBD (IOIBD). In 2020 and 2021, Clarivate, Web of Science named Professor Dr Kaplan a Highly Cited Researcher in recognition of being in the top one percent of cited researchers. In 2021, Professor Dr Kaplan received Crohn's and Colitis Canada's Research Leader Award and was inducted into the Canadian Academy of Health Sciences. He is a Killam Laureate, receiving the Killam Annual Professor Award in 2022.



Khong Tak Loon

Associate Professor Dr Khong Tak Loon is the current Head of Unit and Associate Professor in Colorectal Surgery, Department of Surgery, University Malaya Medical Centre (UMMC) since February 2019. He is a colorectal surgeon and routinely delivers surgical care to patients with colorectal cancer (CRC) and benign bowel conditions such as inflammatory bowel disease, diverticular disease and perianal conditions. His research interests include:

- Determining barriers preventing timely access to diagnostic tests and appropriate surgical care for patients with bowel pathology.

FACULTY BIODATA



Desmond Leddin

Professor Dr Desmond Leddin graduated from Trinity College, Dublin, Ireland and did postgraduate training in Internal Medicine and Gastroenterology at Queens University, Canada and at the University of Toronto before completing a Masters in Physiology at Queens University on Intestinal Inflammation. He chaired the Royal College of Canada examination board in Gastroenterology and is a past President of the Canadian Association of Gastroenterology. Research interests are inflammatory bowel disease, colon cancer screening, and climate change. He has authored or co-authored several of the papers laying out the implications of climate change for digestive health. He has chaired the WGO Training Centers committee, the WGO research committee and is current chair of the WGO climate change working group education subcommittee. He is Professor of Medicine at Dalhousie University, Canada.



Alex Leow Hwong Ruey

Dr Alex Leow is Consultant Gastroenterologist and Hepatologist in Pantai Hospital Kuala Lumpur and is Honorary Consultant Gastroenterologist and Hepatologist to University Malaya Medical Centre, Kuala Lumpur, Malaysia. He previously worked as Associate Professor in the Department of Medicine at the Universiti Malaya. He is currently a member of the Asian EUS Group, Chairman of the Malaysian IBD Special Interest Group, the past Secretary General of the Organising Committee of the Asia Pacific Digestive Week 2021 and Executive Committee Member of the Malaysian Society of Gastroenterology and Hepatology for since 2017.

His areas of interest are diagnostic and therapeutic endoscopy, *Helicobacter pylori*, inflammatory bowel disease and has authored and co-authored in numerous papers in peer-reviewed journals and presented in both local and international conferences.

FACULTY BIODATA



Lim Seng Gee

Professor Dr Lim Seng Gee is Director of Hepatology at the Division of Gastroenterology and Hepatology, National University Health System, Singapore, and was previously Chief of Division. He graduated in 1980 from Monash Medical School and completed his research MD at the Royal Free Hospital. He is a member of the editorial boards for Liver International, Journal of Viral Hepatitis, Hepatology International, Alimentary Pharmacology and Therapeutics, Lancet Gastroenterology & Hepatology, and Evidence Based Internal Medicine Solutions. He is also on the advisory board of Gilead Sciences, Roche, Arbutus, Assembly, Springbank, Eisai, Abbvie and Abbott Diagnostics.

Professor Dr Lim is currently chairman of the Singapore Hepatology Conference and Science of HBV Cure Conference, and was previously the Chairman of the Asia Pacific Association for Study of the Liver (APASL) Liver Week 2013 Congress. He served as Governing Council member from 2014-2018 of the International Association for Study of Liver (IASL), and has been appointed to the AASLD Asia Pacific Regional Advisory Council in 2018. He is also governing council board member of International Coalition for Eradication for Hepatitis B (ICE-HBV) and a co-chair of the HBV Forum combination therapy committee. He is faculty at the Asia Pacific EBM workshop.

His research includes clinical trials of new treatments for chronic hepatitis B and C, and translational research in viral hepatitis, involving molecular biology and immunology of hepatitis B. He has published 253 peer reviewed publications and secured peer review grant funding worth >SGD \$48 Million (>USD\$35M), including the award of a SGD \$25 million National Translational Clinical Research grant in 2015 to investigate eradication of HBV, which was recently renewed. In 2018 he was awarded the NMRC Clinician Scientist Award for research in HBV. His h-index is 58.



Geoffrey Metz

Professor Dr Geoffrey Metz trained in general medicine in Melbourne before undertaking five years training in gastroenterology at Central Middlesex Hospital, London, under Sir Francis Avery-Jones.

He was Chairman of Continuing Education and at the Royal Australasian College of Physicians for several years before becoming President-Elect and then President of the College.

Professor Dr Metz has been involved in development of medical education internationally through the World Gastroenterology Organisation over the past twenty years and is currently President-Elect of the WGO.

In 2021, Geoffrey was awarded Officer of the Order of Australia for Services to Medicine.



Nazri Mustaffa

Associate Professor Dr Nazri Mustaffa received his MBBS from the University of Adelaide. Following this he acquired his Master of Medicine (Internal Medicine) qualification from Universiti Sains Malaysia. He then obtained his National Specialist Registration in Gastroenterology following attachments at the University Malaya Medical Centre, Kuala Lumpur as well as Concord Repatriation General Hospital, Sydney. He subsequently received his PhD from the University of Sydney for his research on flow cytometric evaluation of T-cell populations in patients with inflammatory bowel disease. He is currently an Associate Professor and Consultant Gastroenterologist as well as Deputy Chair, Human Research Ethics Committee at the School of Medical Sciences, Universiti Sains Malaysia in Kubang Kerian, Malaysia.

FACULTY BIODATA



Nik Razima Wan Ibrahim

Dr Nik Razima Wan Ibrahim is a Consultant of Gastroenterology and Hepatology based at Hospital Serdang, Selangor. She graduated from University of Leicester Medical School and continued her further studies in Internal Medicine through the Masters of Medicine Programme at the Universiti Kebangsaan Malaysia. She then completed the Fellowship of Gastroenterology and Hepatology programme under the Ministry of Health Malaysia. Her interest includes Inflammatory Bowel Disease, Colorectal Cancer and Viral Hepatitis.



Bishr Omary

Professor Dr Bishr Omary is the Henry Rutgers Professor of Biomedical Sciences at Rutgers University (United States), and Senior Vice Chancellor for Academic Affairs and Research for the Rutgers health-related campus. He was president of the American Gastroenterological Association (AGA) (2021) and *Gastroenterology* editor-in-chief (2011-2016), is member of the World Gastroenterology Organization Climate Change (CC) Working Group, member of the US GI multi-society (AASLD/ACG/AGA/ASGE) task force on CC, and is involved in establishing the Center for CC, Health, and Healthcare at Rutgers University. His laboratory studies diseases caused by mutations of intermediate filament cytoskeletal proteins and heme biosynthesis enzymes.



David Ong Eng Hui

Dr David Ong is a senior consultant gastroenterologist at the Mount Elizabeth Orchard Medical Centre. His area of sub specialty interest is in inflammatory bowel disease with a focus on colorectal cancer surveillance and the gut microbiome.

Prior to this appointment, Dr Ong was the Head of Gastroenterology and Hepatology at the National University Hospital (NUH), Singapore and founded the IBD unit there. He was also the first to perform a fecal microbiota transplant (FMT) in Singapore, on a patient with recurrent clostridium difficile colitis in 2014 and has since set up Southeast Asia's first and only stool bank known as the Asian Microbiome Library.

Dr Ong holds an Adjunct Associate Professorship at the Department of Medicine, National University of Singapore (NUS), where he remains as a visiting senior consultant.

Nationally, Dr Ong serves as the President of the Gastroenterological Society of Singapore (GESS), the honorary secretary of the Chapter of Gastroenterology, Academy of Medicine, Singapore and a member of the Singapore Medical Council (SMC) Complaints Panel since 2016.

FACULTY BIODATA



Ooi Choon Jin

Dr Ooi Choon Jin obtained his MBBS from National University of Singapore and attained his higher degree from the Royal College of Physicians, United Kingdom. He is a fellow of the Royal College of Physicians, Edinburgh and the Academy of Medicine Singapore. From 1998 to 2000, he trained at the Center for the Study of Inflammatory Bowel Disease at Massachusetts General Hospital and Harvard Medical School.

He is an Adjunct Associate Professor at the Duke-NUS Medical School and practices at Gleneagles and Farrer Park Medical Centres. He previously served as Chairman of the Chapter of Gastroenterologists, Academy of Medicine Singapore and President of the Gastroenterological Society of Singapore. He is the Vice President of the Asian Pacific Association of Gastroenterology (APAGE) and the lead for APAGE Working Group on IBD.



Teerha Piratvisuth

Professor Dr Teerha Piratvisuth is Professor of Medicine at the Prince of Songkla University, Hat Yai, Thailand. He completed his medical degree with first class honor, at the Prince of Songkla University in 1985. During 1993-1994 he studied as a Clinical Fellow in Hepatology at King's College School of Medicine and Dentistry in London, UK. In 1995 he moved to the US where he spent a further year as a Clinical Fellow in hepatology and endoscopy at the University Texas, Houston Medical School. He currently holds the positions of Vice Dean at Prince of Songkla University and Director of the NKC Institute of Gastroenterology and Hepatology. Professor Dr Piratvisuth was President of the Liver Society of Thailand 2011-2012. He was President of APASL 2011, Vice President of APDW 2012, Scientific Committee Chairman of APLD 2016, Scientific Committee Chairman of Gastro 2018 and Honorary President APASL 2021. He is a member of the steering committee of APASL.

Professor Dr Piratvisuth has an extensive publication history on liver disease particularly hepatitis B&C and is on the editorial board of Hepatology International, Korean Journal of Gastroenterology and Chinese Journal of Infectious Disease and is a reviewer for the Journal of Gastroenterology and Hepatology, the Journal of Alimentary Pharmacology and Therapeutics, the Journal of Hepatology, Hepatology, Liver International, Hepatology International, the Journal of Viral Hepatitis, Antiviral Therapy and Journal of Antimicrobial chemotherapy.



Manoj Kumar Sharma

Professor Dr Manoj Kumar Sharma is currently the Professor and Head of Department of Hepatology and Liver Transplantation at the Institute of Liver & Biliary Sciences, New Delhi, India. His area of interests are Hepatitis B, Metabolic Associated Fatty Liver Disease, Quality of life and sleep disorders in cirrhosis, Portal Hypertension, and Hepatocellular Carcinoma. He has published 145 articles on these topics and has done 58 publication reviews to date. He currently hold multiple posts which includes Secretary General cum Treasurer as well as Chairman of Guidelines Committee, APASL. He is also the Associate Dean APASL School of Hepatology. Professor Dr Manoj Kumar Sharma is the Assistant Director, World Gastroenterology Organization (WGO) New Delhi International Training Center at Institute of Liver and Biliary Sciences, New Delhi and part of Board of Directors for Asia Pacific Digestive Week (APDW) Federation.

FACULTY BIODATA



Hidekazu Suzuki

Professor Dr Hidekazu Suzuki completed his medical school studies in 1989 from Keio University School of Medicine, Tokyo, Japan and subsequently completed his postgraduate course at the same university. He then became the post-doctoral research fellow at the University of California at San Diego, La Jolla, California, USA. He served as Professor at Medical Education Center, Keio University School of Medicine before he left for his current post in 2019 as the Professor at the Division of Gastroenterology and Hepatology, Department of Internal Medicine, Tokai University School of Medicine. Apart from that, he is also Guest Professor, at the School of Basic Medical Sciences, Peking University and Visiting Professor at Department of Internal Medicine, Tokyo Dental College.

Professor Dr Hidekazu Suzuki is also part of the Asian Neurogastroenterology and Motility Association (ANMA) Governing Council, President of the Japanese Society for Microcirculation and International Committee Member of American Gastroenterological Association (AGA).



Tan Soek Siam

Dr Tan Soek Siam is senior consultant in the Department of Hepatology, Selayang Hospital, Selangor, Malaysia. She was the head of department and head of hepatology service in MOH up until 2017. Dr Tan graduated from Trinity College, Dublin, Ireland, with honours in Medicine. She did her fellowship in hepatology in the Institute of Liver Study at King's College Hospital, United Kingdom and also received training in Queen Mary Hospital, Hong Kong and University of Michigan, USA. She had received several awards for her clinical service and her research work from local and international bodies.

Dr Tan's research interests include acute liver failure, acute-on-chronic liver failure, chronic hepatitis B and C, autoimmune liver disease, non alcoholic fatty liver disease and liver transplantation. She is the principal investigator of numerous viral hepatitis B and C and non alcoholic fatty liver disease clinical trials. She had won several grants for research and clinical trial funding. She is a member of the Asia Pacific Association for the Study of the Liver (APASL)-ACLF working party, the APASL-ACLF Research Consortium (AARC). She had authored more than fifty publications in peer review journals, Asia Pacific regional clinical practice guidelines, a few book chapters and a reviewer for several peer review journals.

She is a member of the editorial board of the journal Hepatology International. She is the Past President of the Malaysian Society of Gastroenterology and Hepatology 2017-2019, past Council Member of the College of Physicians, Academy of Medicine of Malaysia, Fellow of the Academy and a member of the Malaysian Transplant Society. She was the deputy chair and scientific co-chair (hepatology) of the Asian Pacific Digestive Week 2021.

FACULTY BIODATA



Uday C Ghoshal

Professor Dr Uday C Ghoshal is Professor in the Department of Gastroenterology, faculty-in-charge of the Gastrointestinal Pathophysiology and Motility Laboratory, Adjunct Professor of the Centre for Biomedical Research, SGPGI Campus, Lucknow, India. He has published more than 342 research papers. He is a member of Rome-Asian Working Team, Rome Working Team on Multinational, Cross-Cultural Research and Intestinal Microenvironment and FGIDs committee of Rome Foundation, Fellow of Rome Foundation and Co-Chair of Rome Research Committee. He is a Fellow of the American College of Gastroenterology, and a member of Indian Society of Gastroenterology, Indian National Association of Study of Liver, Society of Gastrointestinal Endoscopy of India (Governing Council Member) and Association of Physicians of India. He is a founder member and the Secretary General of Asian Neurogastroenterology and Motility Association and Honorary Secretary of Indian Motility and Functional Bowel Disease Association.

Professor Dr Ghoshal is currently an associate editor of J Neurogastroenterology and Motility, editorial board member of J Gastroenterol Hepatol, World J Gastroenterol and American J Robotic Surgery. He is also a peer reviewer to 35 international journals. He is in the advisory board of Nature Reviews Gastroenterology and Hepatology. He is the National Coordinator of Indian Society of Gastroenterology Task Force on IBS. He is also the Chair of Epidemiology and Infection section of Asian IBS Consensus and Asian Dyspepsia Consensus Teams and member of Asian Barrett's Consortium. He has received 33 awards and orations including 8 gold medals during MBBS study. He was a visiting clinician to Mayo Clinic, Scottsdale, USA, Hamad Medical Corporation, Doha, Qatar, and WHO Fellow in Prince of Songkhla Univeristy, Hat Yai, Thailand.



Tim Vanuytsel

Professor Dr Tim Vanuytsel graduated in 2007 from Leuven University Medical School, Belgium. He obtained a PhD degree in biomedical sciences in 2014 with a thesis on the role and mechanisms of intestinal permeability in functional gastrointestinal disorders.

Professor Dr Vanuytsel currently holds a position as a consultant gastroenterologist in Leuven University Hospitals with a clinical focus on functional gastrointestinal disorders and patients with intestinal failure. He is the co-founder and medical director of the Leuven Intestinal Failure and Transplantation center (LIFT), which is the largest intestinal failure center and the only small bowel and multivisceral transplant center in Belgium.

Professor Dr Vanuytsel's research interest lies in the pathophysiology and treatment of functional gastrointestinal disorders and intestinal failure and transplantation. He has published >150 original research articles and reviews in international peer-reviewed journals on both clinical and basic science aspects of gastroenterology. He is the (co-)supervisor of 15 PhD students. He is the editor in chief of Acta Gastroenterologica Belgica, associated editor of the GI section of Current Opinion in Pharmacology and member of the editorial board of Neurogastroenterology and Motility.

FACULTY BIODATA



Andrew Veitch

Professor Dr Andrew Veitch is a gastroenterologist, and Honorary Professor of Gastroenterology in Wolverhampton, UK, and is President of the British Society of Gastroenterology (BSG). He has published widely on endoscopic practice and guidelines, and more recently on environmental sustainability in gastroenterology. He is leading on Climate Change and Sustainability for BSG, leads the World Gastroenterology Organisation Green Endoscopy Group, and has led the quality improvement programme in endoscopy services for the European Society of Gastrointestinal Endoscopy, contributing to their green endoscopy policy.



Wei Shu-Chen

Dr Wei Shu-Chen graduated from the Institute of Clinical Medicine from the National Taiwan University in 2004, and received the research fellowship training in Dr Podolsky's Lab (MGH, Boston) from 2006 to 2008. Her research interest includes colorectal cancer and inflammatory bowel disease, and more shifted to IBD recently. Dr Wei served as the Secretary General for the Taiwan Society of IBD from 2014 to 2019, the Secretary General of the 7th AOCC meeting in 2019. She is currently the Executive Director of TSIBD, the representative of Taiwan for AOCC, and also as the governing board member of AOCC.



Vincent Wai-Sun Wong

Professor Dr Vincent Wong is Mok Hing Yiu Professor of Medicine and head of the Division of Gastroenterology and Hepatology, The Chinese University of Hong Kong. His research focuses on viral hepatitis and non-alcoholic fatty liver disease (NAFLD), in particular the use of non-invasive tests for screening and diagnosis. He has over 500 publications in international medical journals, and his latest h-index is 91. Together with the Asia-Pacific Working Party, he wrote the Asia-Pacific Guidelines on the Management of NAFLD in 2018. He is an associate editor of *Alimentary Pharmacology and Therapeutics* and an editorial board member of the *Journal of Hepatology*, *Hepatology*, *JHEP Reports* and *Clinical and Molecular Hepatology*. He served as the President of the Hong Kong Association for the Study of Liver Diseases from 2015 to 2017 and is currently the Chairman of the Subspecialty of Gastroenterology and Hepatology, the Hong Kong College of Physicians. He has received research awards from the Asian Pacific Association for the Study of the Liver, Asian Pacific Digestive Week Federation, British Society of Gastroenterology, Hong Kong College of Physicians and the Food and Health Bureau.

FACULTY BIODATA



Justin Che-Yuen Wu

Professor Dr Justin Wu is the Associate Dean (Health Systems) of Faculty of Medicine and the Chairman of CUHK Medical Services, The Chinese University of Hong Kong (CUHK). He is responsible for the development of collaborative network with private health systems, business and industry partners in Hong Kong, Greater Bay Area and beyond. He graduated from CUHK with Distinction in Medicine in 1993. He underwent internal medicine and gastroenterology training under the supervision of Professor Dr Joseph Sung. He pursued GI motility training in Royal Adelaide Hospital under the supervision of Professor Dr John Dent and Professor Dr Richard Holloway in 2000.

Professor Dr Wu joined CUHK as an associate professor in 2006 and was then promoted to professor in 2009. He has academic and clinical focus in the field of functional gastrointestinal disorder and gastroesophageal reflux disease with over 300 publications in top medical journals including New England Journal of Medicine, Lancet and Gastroenterology and a h-index of 50. He is a member of the Working Group of Chicago Classification for esophageal motility disorders. He is serving as leader in many local and international professional organizations, which include the President of Asian Pacific Association of Gastroenterology, Past President of Hong Kong Society of Gastroenterology, President of APDW 2017, and Scientific Committee Chairman of Asia Neurogastroenterology and Motility Association. He served as the managing director of Journal of Gastroenterology and Hepatology, and International Associate Editor of American Journal of Gastroenterology.

Professor Dr Wu is the former Chief Operating Officer of CUHK Medical Centre, the private teaching hospital of CUHK; the founding director of Asia's first "Global Physician-Leadership Stream" (GPS) of MBChB programme; and the founding director of Hong Kong Institute of Integrative Medicine with the mission of fostering cooperation between Western and Chinese medicine in the health system. He is an eminent teacher with 8 teaching awards of medical education, which include Vice-Chancellor Exemplary Teaching Award, Master Teacher, and Teacher of the Year Awards in CUHK Medicine. He also actively contributes to the development of medical innovations in Hong Kong. He is serving as director and advisor of biomedical technology companies and investment funds.

ASSESSMENT AND REFERRAL PATHWAY FOR METABOLIC DYSFUNCTION ASSOCIATED LIVER DISEASE (MAFLD)

Tan Soek Siam

Selayang Hospital, Selangor, Malaysia

In Malaysia, the prevalence of MAFLD is 20-40 % in the general population and it is higher at around 50% in the diabetes subpopulation. About 10-25% of patients with liver steatosis will progress to steatohepatitis characterized by inflammations and hepatocyte ballooning. This condition can lead to fibrosis and cirrhosis with its complications like hepatocellular carcinoma, portal hypertension and hepatic decompensation. Despite the alarming statistics, recent analysis by Lazarus et al on the global preparedness of NAFLD revealed no countries had a comprehensive public health response for non-alcoholic fatty liver disease.

Simple assessment linked to effective referral pathway is key to effectively manage this large burden of liver disease.

The Malaysian Society of Gastroenterology and Hepatology in its consensus statement on metabolic dysfunction-associated fatty liver disease recommended as Statement 1: Metabolic dysfunction-associated fatty liver disease (MAFLD) is diagnosed in a person with fatty liver based on imaging, noninvasive score, or histology, if the person is either overweight or obese, has type 2 diabetes mellitus, or has at least two metabolic risk abnormalities.

As the severity of liver fibrosis is the single most important predictor of liver-related complications and mortality, the assessment of the severity of liver fibrosis is important. There are a variety of non-invasive tests of liver fibrosis which could be based on blood indices or imaging using various elastography techniques. A simple blood-based test called Fibrosis-4 (FIB-4) score uses readily available parameters like age, aspartate aminotransferase, alanine aminotransferase, and platelet count, it has modest accuracy but high negative predictive value for advanced liver disease. The panelists of the consensus recommended that MAFLD patients should have liver fibrosis assessment using FIB-4 and stratified as having low risk of advanced liver fibrosis if FIB-4 is < 1.3 . (for older patients 65 years old and above, the FIB-4 cut off is 2.0). These patients are best managed in the primary care or by the endocrinologist or cardiologist who is actively managing their metabolic diseases.

MAFLD patients with FIB-4 ≥ 1.3 have increased risk of advanced liver fibrosis and should be referred to undergo further assessment by liver stiffness measurement to determine the need for screening tests or management of hepatocellular carcinoma and varices.

SYMPOSIUM 1 - The MSGH Consensus Statements on MAFLD

IMPROVING METABOLIC OUTCOMES IN MAFLD

Chan Siew Pheng

Universiti Malaya, Kuala Lumpur, Malaysia

Cardiovascular disease (CVD) is the leading cause of mortality in patients with MAFLD. Both MAFLD and CVD share common risk factors. MAFLD is associated with a 2-3 fold increased risk of prediabetes, diabetes and hypertension; a proatherogenic metabolic dyslipidaemic profile i.e. hypertriglyceridemia, low HDL-C, increased small, dense LDL particles, and a state of subclinical inflammation. These close associations result in MAFLD being associated with an increase in cardiovascular events and the CVD risk being proportionate to the severity of MAFLD. Cardiovascular surveillance that includes early identification of cardiometabolic risk factors and institution of appropriate management of these risk factors is mandatory. Optimizing CVD risk factor control remains the main strategy of treatment - these include, maintaining a healthy lifestyle; smoking cessation; adequate blood pressure (1st-line agents - RAS blockers) and lipid control (statins unless contraindicated). Achieving HbA1c targets in those with T2DM - with glucose-lowering drugs (GLDs) that also result in weight loss are preferred; with emerging evidence of improvement of steatosis and fibrosis from the 2 new classes of GLDs, namely GLP1-RAs and SGLT2-i.

The close inter-relationship between T2DM, hypertension, dyslipidaemia and MAFLD has gained increasing recognition and assessing for presence of MAFLD has been incorporated into recent relevant clinical practice guidelines. Standard detailed cardiometabolic risk screening and aggressive modification of CVD risk factors is mandatory in patients with MAFLD.

SYMPOSIUM 1 - The MSGH Consensus Statements on MAFLD

ROLE OF PRIMARY CARE IN THE MANAGEMENT OF MAFLD

Anis Safura Ramli

Universiti Teknologi MARA, Selangor, Malaysia

Metabolic dysfunction-associated fatty liver disease (MAFLD) and cardiovascular diseases (CVD) are both manifestations of end-organ damage of the metabolic syndrome (MetS). A meta-analysis of 16 observational studies showed that patients with MAFLD had a higher risk of fatal and/or non-fatal CVD events than those without MAFLD. In Malaysia, our study has shown that MAFLD is highly prevalent at 54.4% in patients with at least one cardiometabolic risk factor attending a primary care clinic. The strong association of MAFLD with MetS and CVD underscores the need for early identification of MAFLD in primary care. These patients need aggressive management of their cardiometabolic risk factors in order to reduce CVD events. Patients aged ≥ 30 years old attending a primary care clinic should be assessed for the presence of MetS components using the Joint Interim Statement 2009 definition and they should be risk stratified using the 10-year general CVD Framingham Risk Score (FRS). The cut-off age of ≥ 30 years is recommended as the prevalence of cardiometabolic risk factors rises exponentially in Malaysian adults aged ≥ 30 years. If these patients are found to have obesity or T2DM or ≥ 2 MetS components or elevated alanine aminotransferase (≥ 34 U/L) or in the high FRS category, they are recommended to have ultrasonography to screen for MAFLD. If they are found to have MAFLD, then the severity of the condition should be assessed using FIB-4 scoring. Patients with MAFLD and coexisting cardiometabolic risk factors should be targeted for aggressive lifestyle intervention and risk factor management. The ultimate management goals for these patients are to prevent the progression of MAFLD and to improve their cardiovascular outcomes. Only patients with more severe MAFLD require referral to gastroenterology/hepatology, while MAFLD patients with less severe liver disease should remain in primary care where they are best managed.

GUT MICROBIOTA DYSBIOSIS IN COVID-19: EPIPHENOMENON OR A MEANINGFUL ASSOCIATION?

Uday C Ghoshal

Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India

Gut microbiota is the largest organ of the human body. The human gut contains more microbial cells than the total number of cells in the body itself (10^{14} Vs. 10^{13} , respectively). Several reports suggested gut microbiota dysbiosis among patients with Coronavirus disease-19 (COVID-19) both during the acute illness and following recovery from it. One study showed impairment of short-chain fatty acid and L-isoleucine biosynthesis by gut microbiota to persist during follow-up after COVID-19. One study showed that patients with COVID-19 with signature of high Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) RNA had greater degree of gut microbiota dysbiosis. Some of these studies even showed that altered gut microbiota might have role in susceptibility to SARS-CoV-2 infection, immune response of the body, clinical severity of the initial illness and mortality, long-term clinical consequences including persistent GI symptoms, and even COVID-19 vaccine efficacy and its adverse effects. However, most of the above-mentioned conclusions are not based on high-quality evidence but are either based on uncontrolled observational or case-control studies. Hence, we are far from establishing a cause and effect relationship between gut microbiota dysbiosis and occurrence, severity and outcome of COVID-19 and its prevention. Gut microbiota might be altered due to multiple other confounders in the reported studies such as hospitalization, dietary alteration, use of antibiotics, immunomodulators such as corticosteroids, ivermectin, pro- and anti-motility agents, comorbid illnesses such as diabetes mellitus, hypertension, renal failure and drugs used to treat these conditions and various invasive interventions. Hence, whether relationship between COVID-19 and gut microbiota dysbiosis is epiphenomenon or a meaningful association needs further investigations.

GUT MICROBIOTA IN COLORECTAL CANCER

Wei Shu-Chen

National Taiwan University Hospital, Taiwan

There are differences in the composition of microbiota between colorectal cancer (CRC) patients and healthy individuals. Microbiome dysbiosis leads to the enrichment of cancer-promoting bacterial populations, loss of protective populations or maintaining an inflammatory chronic state, all of which contribute to the development and progression of CRC. The gut microbiome plays an integral role in CRC initiation and progression, and oncologic drug metabolism and toxicity. Gut microbiota can influence the development and progression of CRC, through influencing factors such as secretion of toxins; enzymes for activating carcinogenesis (including β -glucuronidase, β -glucosidase, azoreductase, nitroreductase, and alcohol dehydrogenase); hydrogen sulfide generation; generation of reactive oxygen species and inflammation; secondary bile salt transformation; and products of protein fermentation. Microbes also have a role in the development of chemoresistance by mechanisms like immune system activation, drug modification, and autophagy modulation. With the progress in understanding the roles of gut microbiota in CRC, we will discuss about the latest evidence about the pathophysiology, potential usage of gut microbiota in the diagnosis and treatment for CRC.

SYMPOSIUM 3 - Inflammatory Bowel Disease

ISOLATED ILEOCECAL CROHN'S DISEASE: IS IT TIME TO SWING THE PENDULUM BACK TO SURGERY?

Khong Tak Loon

University Malaya Medical Centre, Kuala Lumpur, Malaysia

Do you discuss the option of surgery with your patients with isolated ileocaecal Crohn's disease (CD)? When would you consider surgical management option for such patients?

Surgery was historically the principal modality of treatment for CD but surgical rates have progressively fallen since 1970s with the advent of immunomodulators and biologics. However, given that the lifetime risk of a patient with CD for surgery can be up to 80%, is the observed drop in surgical rates true? Or, are we just delaying the inevitable for our patients?

Surgery has been demonstrated to confer the following benefits in the Liric study:

1. Equivalence in quality of life (QOL) improvement for CD patients with medical refractory disease compared to biologics
2. Biologic-sparing and abrogation of escalation in medical therapy compared to IFX
3. Significantly more cost effective modality to manage refractory CD
4. Earlier achievement of optimal control of disease

Furthermore, referring patients late with CD complications for surgical management can result in poorer surgical outcomes and QOL. We therefore have the obligation to our patients to consider timely surgery as an alternative to escalation of medical therapy by weighing risks/benefits of either modalities within a multidisciplinary co-management approach.

SYMPOSIUM 4 - Chronic Hepatitis B: New Treatment Paradigm

DEBATABLE AMONG GLOBAL HEPATITIS B GUIDELINES: HOW DO WE MANAGE PATIENTS?

Teerha Piratvisuth

Prince of Songkla University, Hat Yai, Thailand

EASL, AASLD and APASL are the major important Clinical Practice Guidelines for management of chronic hepatitis B. Although most recommendations are similarly among these three CPGs, but there are some issues are slightly different. This presentation aims to discuss the debatable issue based-on the data from many clinical studies and tries to propose the proper solution for management of patients with these issues. The debatable issue in this presentation would includes management of immune tolerant patients, HBeAg-negative with normal ALT, inactive HBV with low HBV DNA and normal, patients with compensated cirrhosis and prevention of mother to child transmission in pregnant women.

ASIAN PACIFIC ASSOCIATION FOR THE STUDY OF LIVER (APASL) GUIDELINES: HEPATITIS B VIRUS IN PREGNANCY

Manoj Kumar Sharma

Institute of Liver and Biliary Sciences, New Delhi, India

Hepatitis B virus (HBV) infection still remains a major public health issue in the Asia-Pacific region. Most of the burden of HBV-related disease results from infections acquired in infancy through perinatal or early childhood exposure to HBV in Asia-Pacific. Hepatitis B during pregnancy presents unique management issues for both the mother and fetus.

The APASL guidelines published in *Hepatology International* recently provide a comprehensive review and recommendations based on available evidence in the literature, for the management of females with HBV infection through every stage of pregnancy and postpartum. These also address the concerns, management challenges, and required follow-up of children born to hepatitis B-positive mothers. These also provide agenda for future research in this area.

This APASL Guidelines covers 11 sections including: Epidemiology of hepatitis B virus infection in pregnant females in Asia-Pacific; Immunopathogenesis of hepatitis B virus infection (acute and chronic) in pregnancy; How hepatitis B virus infection (acute and chronic) impacts the health of pregnant females and outcome of pregnancy; Impact of pregnancy on hepatitis B virus infection severity and outcomes (acute and chronic) and management of liver disease (general management and use of antivirals) in pregnant females with hepatitis B virus infection; Mother to child transmission (MTCT) of hepatitis B virus [mechanisms and associated factors; Prevention of mother to child transmission; Safety of invasive obstetric procedures in the pregnant females with hepatitis B virus infection in terms of mother to child transmission and optimum mode of delivery in HBsAg positive mother; Assisted conception in chronic hepatitis B virus infected females in terms of mother to child transmission; Postpartum follow up of children of chronic HBV infected mothers; Breastfeeding in hepatitis B virus infected mothers ;and Public health aspects of HBV infection in pregnancy.

Lunch Satellite Symposium 2 (*Takeda*)

ARE WE DOING ENOUGH IN TREATING GERD?

Daphne Ang Shih Wen

Changi General Hospital, Singapore

Gastroesophageal reflux disease (GERD) is amongst the most common diseases seen by gastroenterologists, surgeons and primary care physicians. Our understanding of the diverse manifestations of GERD, improvements in diagnostic testing and approach to patient management have evolved. Although proton pump inhibitors remain the medical treatment of choice for GERD, a number of challenges remain. In up to one half of patients with GERD symptoms, these symptoms persist despite appropriate PPI therapy. Amongst patients with objective evidence of GERD proven on gastroscopy and/or ambulatory pH monitoring, one-fifth may manifest suboptimal treatment response to PPI therapy. The intrinsic limitations of PPIs underlie the unmet clinical needs that have been identified over the past decades. Along with advances in surgical and endoscopic management of GERD, the development of potassium-competitive acid blockers represents a significant leap in the treatment armamentarium. In this presentation, we provide updated evidence based recommendations for the evaluation and management of GERD, and address the unmet clinical needs of patients with GERD.

Lunch Satellite Symposium 2 (*Takeda*)

PAVING THE WAY TOWARDS DISEASE MODIFICATION IN CROHN'S DISEASE

Wei Shu-Chen

National Taiwan University Hospital, Taiwan

Crohn's disease (CD) is a chronic disease with progressive behavior. Without early appropriate management, irreversible complications such as stricture and perforation would happen in more than 70% of patients. Mucosal healing, but not clinical remission, has been shown to decrease surgery and hospitalization. Early and effective treatment with a time-bound treat to target approach is the key strategy to improve patients' outcomes. Even with the big progress in omics studies and biomarkers development, so far, we are not able to precisely predict the disease course for CD patients. Therefore, proactive monitor would be the best way to detect disease progression and respond earlier would be better than facing symptoms flare with complications. Persistently effective treatment is the next step to maintain the successful effect. With the advance in treatment and monitoring, paving the way towards disease modification in Crohn's disease is an achievable goal.

THE GLOBAL GASTROENTEROLOGY COMMUNITY TO MEET THE CHALLENGE OF CLIMATE CHANGE

Geoffrey Metz

University of Melbourne, Australia

“Uniting the global gastroenterology community to meet the challenge of climate change” is effectively the title of a Commentary published simultaneously in Gastroenterology, GUT and JCG in November 2021 and written by the Climate Change Working Group of the World Gastroenterology Organisation. The first four authors of the Commentary are the speakers in this symposium. This overview sets the scene for the four talks that follow.

Our planet has been rapidly warming since the advent of the Industrial Revolution. Scientists reported why this phenomenon is occurring and then predicted that global warming would cause major increases in the frequency and magnitude of droughts, wildfires, cyclones, floods, soil degradation and crop failures affecting food and water security, health and diseases leading to mass migrations and posing an existential threat to life on earth.

However, physicians, world leaders and the population generally have only recently become alarmed by the predictions. Explanations for the failure to act earlier and more vigorously are given.

The four talks that follow will describe many of the problems facing gastroenterologists and actions we should be taking to mitigate the impact of Climate Change.

GI CARBON FOOTPRINT

Geoffrey Metz

University of Melbourne, Australia

Much is being written about the major production of greenhouse gases by the activities of gastroenterologists.

Endoscopy is an area that most of us are involved in, and Andy Veitch and his Team at the BSG are leaders in that discussion, but there are very many other ways that we produce GHG other than through our endoscopy activities.

We have direct and indirect contributions through our work in our offices and our hospitals, our prescribing, the ordering of pathology and diagnostic imaging tests and ordering of materials used by us in our rooms and hospital.

Travel to the hospital by ourselves and our patients plus travel to conferences is a major contributor.

The Covid-19 pandemic reduced our travel and attendance at meetings and also led to increased consulting via telehealth. These changes have reduced our carbon footprint and have introduced discussions around how practice and conference activities that have changed as a result of the pandemic may never return to pre-Covid levels in order to help mitigate our carbon footprint.

MOVING FORWARD

Bishr Omary

Rutgers University, United States

Climate change is a global challenge with direct detrimental impacts on the health and well being of populations worldwide. Those impacted the most are the underserved and marginalized populations. Gastroenterology, as a major procedure oriented medical discipline, is one of the major unintentional contributors to a less healthy planet by the nature of how it provides care despite saving lives and improving health. However, the discipline of gastroenterology, together with gastroenterologists and allied healthcare providers, as caregivers and individuals, are well positioned to engage and lead by example. Engagement covers the spectrum of working towards green endoscopy and limiting greenhouse gas production, working with industry partners, eliminating nonrecyclable plastic waste, developing and disseminating educational material, advocacy for government and research investments, multi-disciplinary research to improve access to healthcare while simultaneously working towards carbon neutrality, and embedding planetary health in medical specialty and subspecialty training curricula.

SYMPOSIUM 7 - Grand Round Series 2: Overlap Functional GI Disorders

FD-PANCREATIC DYSFUNCTION

Seiji Futagami

Nippon Medical School, Japan

Previous studies have reported that some FGIDs patients, especially IBS patients are overlapped with pancreatic dysfunction. We have reported that refractory FD patients involve FD patients with pancreatic enzyme abnormalities or with pancreatic dysfunction. In Japanese FD guideline, patients with dyspepsia concomitant with pancreatic diseases were addressed. Refractory FD patients involved pancreatic diseases such as early chronic pancreatitis determined by endosonography. Epigastric pain in early chronic pancreatitis can be reduced by the treatment for chronic pancreatitis, albeit, the treatment for FD patients such as acotiamide and anti-acid therapy such as PPI cannot improve epigastric pain in early chronic pancreatitis. Therefore, the precise diagnosis between refractory FD and pancreatic diseases is critical for the treatment. In our data, serum and duodenal trypsin levels in FD patients were associated with duodenal eosinophils accumulations. We also reported that almost 70% FD patients exhibit exocrine pancreatic dysfunction. The ratio of exocrine pancreatic dysfunction in FD patients with pancreatic enzyme abnormalities was significantly higher compared to asymptomatic patients with pancreatic enzyme abnormalities. Therefore, we speculated that exocrine pancreatic dysfunction may be partly associated with FD symptoms.

E-Poster Presentations

- ID 030 CHANGING LANDSCAPE OF LIVER CIRRHOSIS IN MULTI-RACIAL ASIAN COUNTRY: A DECADE COMPARISON**
Nik Arsyad Nik Muhamad Affendi^{2,3}, Sharini Sekaran², Siti Sholihah Azmi², Nazlin Adlina Mohd Mahyudin², Ruveena Bhavani Rajaram², Sanjiv Mahadeva^{1,2}
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³*Department of Medicine, International Islamic University Malaysia, Pahang, Malaysia*
- ID 033 EFFICACY AND SAFETY OF PER-ORAL ENDOSCOPIC MYOTOMY FOR THE TREATMENT OF ACHALASIA CARDIA IN MALAYSIA:A SINGLE CENTRE STUDY**
Nik Arsyad Nik Muhamad Affendi^{1,2}, Shiaw Hooi Ho¹, Peng Choong Lau³, Sanjiv Mahadeva¹
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- ID 083 THE EFFICACY AND SAFETY OF RAVIDASVIR PLUS SOFOSBUVIR IN ADULTS WITH CHRONIC HEPATITIS C (HCV) WITHOUT CIRRHOSIS OR WITH COMPENSATED CIRRHOSIS: FINAL RESULTS OF STORM-C 1, A PHASE 2/3 TRIAL IN MALAYSIA AND THAILAND**
Soek-Siam Tan¹, Sombat Thanprasertsuk², Satawat Thongsawat³, Nicolas Salvadori⁴, Caroline Menétrey⁵, STORM-C-1 Research Team
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- ID 089 APPRAISE THE ACCURACY OF NON-INVASIVE MARKERS (APRI, FIB-4, RPR) IN PREDICTING CIRRHOSIS AMONG LOCAL PATIENTS WITH HEPATITIS B**
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E-Poster Presentations

ID 116 EFFICACY OF FOUR WEEKS TRADITIONAL ASIAN DIETARY PROGRAM ON GASTROINTESTINAL SYMPTOMS, STOOL CONSISTENCY AND STOOL OUTPUT PER WEEK IN HEALTHY VOLUNTEERS

Nur-Fazimah Sahran¹, Yeong Yeh Lee¹, Intan Hakimah Ismail², Fahisham Taib¹, Pek Sung Hoo¹, Shariza Abdul Razak³, Chun Wie Chong³, Palinasamy Uma Devi³, Cindy Shuan Ju Teh⁴, Tengku Ahmad Damitri Al-Astani Tengku Din¹, Kong Zhi Xian⁴, Nurzulaikha Mahd Ab.lah¹, Nashrulhaq Tagiling¹, Vincent Tee¹, Tengku Ahmad Iskandar Tengku Alang¹, Naveen Ramasami¹

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ID 126 PSD_{rest} IS ACCURATE IN PREDICTING THE BALLOON EXPULSION TIME IN DEFECATORY DISORDERS: A VALIDATION COHORT STUDY

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ID 137 LACTOBACILLUS CONTAINING CULTURED MILK DRINK AMELIORATES DEPRESSION AND GASTROINTESTINAL SYMPTOMS SEVERITY IN IRRITABLE BOWEL SYNDROME SUBJECTS

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CHANGING LANDSCAPE OF LIVER CIRRHOSIS IN MULTI-RACIAL ASIAN COUNTRY: A DECADE COMPARISON

Nik Arsyad Nik Muhamad Affendi^{2,3}, Sharini Sekaran², Siti Sholihah Azmi², Nazlin Adlina Mohd Mahyudin², Ruveena Bhavani Rajaram², Sanjiv Mahadeva^{1,2}

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BACKGROUND AND AIM: Chronic viral hepatitis B infection was the most common cause of liver cirrhosis in Asian countries, however with the rising prevalence of obesity and implementation of prevention strategies for viral hepatitis B transmission, we predict that there is a change in the epidemiology of liver cirrhosis. Our aim is to determine the change in epidemiology of liver cirrhosis and hepatocellular carcinoma in our centre.

METHODS: A cross sectional study was conducted where we recruited all liver cirrhosis patients who were attending inpatient and outpatient service in our centre from July 2019 to July 2021. Baseline demography and clinical characteristics were collected via electronic medical record system. Data collected was analyzed and compared with historical data from our centre that was collected approximately a decade ago, from April 2006 to May 2009.

RESULTS: A total of 354 patients were recruited into this study consisting of 198 male (55.9%) and 156 female (44.1%) with mean age of 63.36 year-old (20–90). The aetiologies of liver cirrhosis were NASH, n = 144, (40.7%); viral hepatitis B, n = 78, (22%); viral hepatitis C, n = 31, (8.8%); alcohol, n = 29, (8.2%); viral hepatitis B + NASH, n = 16, (4.5%); cryptogenic, n = 23, (6.5%) and autoimmune hepatitis, n = 11, (3.1%). NASH was the leading aetiology in Malay (50.4%) and Indian (46.3%) while viral Hepatitis B was the main aetiology in Chinese (33.3%). 48 patients (13.6%) had hepatocellular carcinoma with viral hepatitis B being the most dominant cause (45.8%) followed by NASH (18.8%) and alcohol (6.3%).

CONCLUSION: Our study showed that there was a drastic change in epidemiology of cirrhosis where the predominant aetiology has changed from viral hepatitis B to NASH. However, viral hepatitis B remained the commonest cause of hepatocellular carcinoma followed by NASH.

Keywords: Liver cirrhosis, Asian, NASH, Chronic viral hepatitis B, Hepatocellular carcinoma

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Table 1: Comparing current data with historical data

Duration of study	July 2019 - July 2021	April 2006 - May 2009	P value	Viral hepatitis B	78 (22.0%)	212 (46.1%)	<0.001
Number of subjects, n	354	460		Viral hepatitis C	31 (8.8%)	85 (18.5%)	<0.001
Mean age, year(range)	63.36 (20-90)	58.8 (15-87)		Viral hepatitis B and NASH	16 (4.5%)	0	<0.001
Gender, n (%)				Viral hepatitis B and alcohol			
Male	198 (55.9%)	317 (68.9%)	<0.001	Viral hepatitis C and NASH	0	5 (1.1%)	0.057
Female	156 (44.1%)	143 (31.1%)	<0.001	Viral hepatitis C and alcohol	6 (1.7%)	0	0.007
Race n (%)				Viral hepatitis B and C	1 (0.3%)	7 (1.5%)	0.084
Malay	119 (33.6%)	96 (20.69%)	<0.001	Alcohol	1 (0.3%)	4 (0.9%)	0.336
Chinese	147 (41.5%)	274 (59.6%)	<0.001	Cryptogenic	29 (8.2%)	58 (12.6%)	0.043
Indian	80 (22.6%)	90 (19.6%)	0.293	PBC/PSC	23 (6.5%)	71 (15.4%)	<0.001
Others	8 (2.3%)	0%	0.001	Autoimmune hepatitis	3 (0.8%)	5 (1.1%)	0.758
Child Pugh classification, n (%)				Others	11 (3.1%)	9 (2.0%)	0.306
A	231 (65.3%)	Not available			11 (3.1%)	4 (0.9%)	0.022
B	66 (18.6%)	Not available		HCC, n (%)			
C	30 (8.5%)	Not available		NASH	9 (18.8%)	0	< 0.001
Not available	27 (7.6%)	Not available		Viral hepatitis B	22 (45.8%)	92 (67.6%)	0.009
Liver cirrhosis Aetiology, n (%)				Viral hepatitis C	6 (12.5%)	13 (9.6%)	0.565
NASH	144 (40.7%)	0	<0.001	Viral hepatitis B and NASH	1 (2.1%)	0	0.261
				Viral hepatitis B and alcohol	0	1 (0.7%)	0.739
				Viral hepatitis C and NASH	0	0	-
				Viral hepatitis C and alcohol	1 (2.1%)	4 (2.9%)	0.826
				Viral hepatitis B and C	0	1 (0.7%)	0.739
				Alcohol	3 (6.2%)	4 (2.9%)	0.341
				Cryptogenic	6 (12.5%)	18 (13.2%)	0.921
				PBC/PSC	0	1 (0.7%)	0.739
				Autoimmune hepatitis	0	1 (0.7%)	0.739
				Others	0	1 (0.7%)	0.739

EFFICACY AND SAFETY OF PER-ORAL ENDOSCOPIC MYOTOMY FOR THE TREATMENT OF ACHALASIA CARDIA IN MALAYSIA:A SINGLE CENTRE STUDY

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INTRODUCTION: Peroral Endoscopic Myotomy (POEM), introduced in 2010, has become a widely accepted treatment for achalasia cardia. However, POEM procedure is technically challenging and recommended to be performed by experienced endoscopists. Our objective was to assess the efficacy and safety of POEM procedures performed in a tertiary referral centre.

METHODOLOGY: This is a retrospective single-centre study. All consecutive achalasia patients that underwent POEM procedure (posterior approach) from November 2015 to June 2022 were recruited. Demographic data, achalasia type, technical success, procedure duration, myotomy length, duration of hospital stay, clinical success and adverse events were recorded. Technical success was defined as completion of POEM procedure from mucosa incision, to tunnel creation followed by myotomy and finally, mucosal closure. Clinical success was defined as a post-procedure Eckardt score ≤ 3 , or a reduction of 4 or more points at 2 months or more after a successful procedure. All POEM procedures were performed by 3 endoscopists (2 gastroenterologists and 1 surgeon) who have had experience in ESD or Heller's myotomy.

RESULT: A total of 86 patients were recruited. The detailed results are summarised in Table 1.

CONCLUSION: The high efficacy (with good intermediate to long-term outcome follow up) and good safety profile of the POEM procedure for achalasia cardia in our centre are comparable with the published literature. Adverse events were generally mild, and all were managed conservatively. The improvement seen in the technical success rate after the first 20 cases is in line with mastering the POEM skill after the initial learning experience.

Table 1

Number of subjects	86
Mean age, years (range)	43.0 ± 15.3 (16-78)
Gender	
Male	39 (45.3%)
Female	47 (54.7%)
Chicago classification	
Type 1	35 (40.7%)
Type 2	42 (48.8%)
Type 3	2 (2.3%)
Not available	7 (8.1%)
Mean duration of procedure time, minutes(range)	128.9 ± 32.8 (65-210)
Mean length of myotomy, cm(range)	10.0 ± 1.8 (6-15)
Technical success	
Overall	81 (94.2%)
1 st 20 cases	17 (85%)
Last 66 cases	64 (96.9%)
Overall complication	16 (19.7%)
Minor complications	16 (19.7%)
Aspiration pneumonia	1 (1.2%)
Surgical emphysema or pneumomediastinum	4 (4.9%)
Intra procedure bleeding	3 (3.7%)
Mucosa injury	7 (8.6%)
Retain of foreign body	1 (1.2%)
Major complication (Defined as complication requiring surgical intervention or death)	0
Mean duration of hospital stay, day (range)	3.5 ± 1.3 (2-8)
Eckardt score	
Mean Pre-POEM, score (range)	7.7 ± 2.3 (3-12)
Mean Post-POEM (follow-up), score (range)	1.3 ± 2.2 (0-12)
Clinical success (from the group who achieved technical success, n=76)	70 (92.1%)
5 patients loss to follow up	
PPI requirement post POEM (data on PPI usage was available in 73 subjects, n=73)	
Regular PPI	16 (21.9%)
On- demand PPI	16 (21.9%)
No PPI	41 (56.2%)
Mean duration of follow up, month (range)	17.5 ± 12.5 (1-61)

THE EFFICACY AND SAFETY OF RAVIDASVIR PLUS SOFOSBUVIR IN ADULTS WITH CHRONIC HEPATITIS C (HCV) WITHOUT CIRRHOSIS OR WITH COMPENSATED CIRRHOSIS: FINAL RESULTS OF STORM-C 1, A PHASE 2/3 TRIAL IN MALAYSIA AND THAILAND

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OBJECTIVES: Simple direct-acting anti-viral regimens are one of the key tools for national scale-up of HCV treatment to achieve its elimination. STORM-C-1 study aimed to assess the safety and efficacy of ravidasvir plus sofosbuvir in adult HCV.

METHODS: Open-label, phase 2/3 single-arm clinical trial conducted in 13 public hospitals in Malaysia and Thailand. Chronic mono-infected HCV or HIV co-infected, aged 18-69 years, without cirrhosis or with compensated cirrhosis were included. Liver cirrhosis was defined as fibroscan ≥ 12.5 kPa (M probe) or ≥ 10 kPa (XL probe), liver biopsy or APRI ≥ 2 in their absence. Once daily ravidasvir (200 mg) and sofosbuvir (400 mg) for 12 weeks were given for patients without cirrhosis and 24 weeks with compensated cirrhosis. Sustained virological response at 12 weeks post treatment (SVR12) was defined as HCVRNA < 12 iu/ml or < 15 iu/ml.

RESULTS: From September 2016 to 2020 we enrolled 603 HCV patients, 78% (472/603) males and median age 47 years old (range 20 to 67). The distribution for genotypes 1, 2, 3 and 6 was 40.3%(243/603), 0.5% (3/603), 49.1% (296/603), and 10.1% (61/603), respectively. Compensated liver cirrhosis was present in 39% (238/603), whilst 32% (192/603) had HIV co-infection and 20% (120/603) had prior interferon therapy. The overall SVR12 was 96.8% (583/602) [95% CI: 95.1% to 98.1%]. The SVR12 for genotypes 1, 2, 3 and 6 were 97.9%, 100%, 97.6% and 88.5%. Subpopulation analysis showed the SVR12 was 96.6% for compensated cirrhosis (230/238), 96.9% for HIV-coinfection (186/192), and 97.5% for genotype 3 with cirrhosis (153/157). Of the 19 patients who failed SVR12, twelve were due to virological failure (9 relapsers and 3 on-treatment breakthroughs). The most frequent adverse events were pyrexia (8%), URTI (6%), cough (6%), dizziness (5%) and headache (5%).

CONCLUSIONS: Ravidasvir plus sofosbuvir was well tolerated with excellent safety and efficacy in HCV infection, including in difficult to treat HCV genotype 3 with cirrhosis.

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APPRAISE THE ACCURACY OF NON-INVASIVE MARKERS (APRI, FIB-4, RPR) IN PREDICTING CIRRHOSIS AMONG LOCAL PATIENTS WITH HEPATITIS B

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INTRODUCTION/OBJECTIVES: Chronic Hepatitis B infection is a known risk factor in cirrhosis development.¹ It is vital to have accurate methods to predict cirrhosis timely before cirrhosis occurs.^{1,2} Due to the undesirable side effects/complications of liver biopsy, non-invasive markers [APRI (AST to Platelet Ratio Index), FIB-4 (Fibrosis-4), RPR (Red Blood Cell Distribution Width to Platelet Ratio)] are preferred.^{1,3,4} However, their accuracies have been reportedly different.^{1,2,4,5} Thus, this study aims to appraise their accuracy in predicting cirrhosis among local patients with hepatitis B.

METHODOLOGY: This retrospective cohort study retrieved medical records of Hepatitis B patients, under Hepatology Clinic follow-up (2020). Random sampling was done. The estimated sample size was calculated based on the sensitivity and specificity of each non-invasive score. Data analysis was performed with SPSS (Statistical Package for Social Sciences), with logistic regression as main analytical technique.

RESULTS: 33.1% of patients recruited were found to have cirrhosis. The AUROC (Area Under the Receiver Operating Characteristic Curve) for all 3 markers were above 0.8 ($p < 0.001$). From these curves, the optimal cut-off values were derived for APRI (≥ 0.5), FIB-4 (≥ 2.57) and RPR (≥ 0.1). APRI (≥ 0.5) showed 95% specificity and 43% sensitivity, with positive likelihood ratio of 8.51. FIB-4 (≥ 2.57) presented 95% specificity, 64% sensitivity and likelihood ratio of 13. RPR (≥ 0.1) depicted 93% specificity, 58% sensitivity and likelihood ratio of 8.29.

DISCUSSION: The derived optimal cut-off values from the statistically significant AUROC coverage, illustrated that the cirrhosis prediction for local hepatitis B patients may be more accurate by applying these values. As these markers are used for diagnostic purpose, specificity was emphasized while choosing the optimal cut-off values, yet conserving adequate statistical strength of their sensitivity. All 3 markers' cut-off values yield good likelihood ratio (significantly > 1) in predicting cirrhosis, with FIB-4 performed better than the other two, which have similar prediction strength.

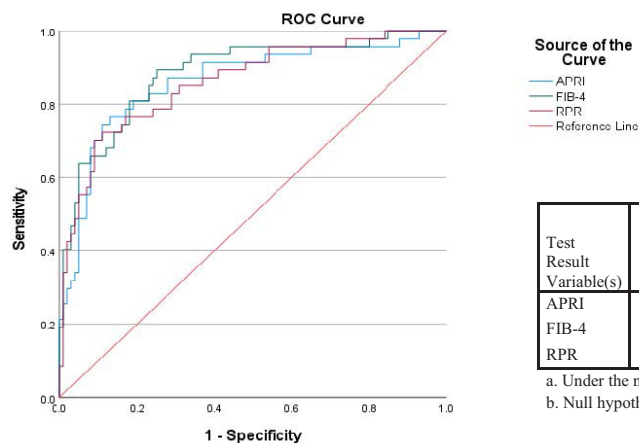
CONCLUSION: The new cut-off values of ≥ 0.5 , ≥ 2.57 and ≥ 0.1 , for APRI, FIB-4 and RPR respectively, predict cirrhosis accurately, with FIB-4 being superior, in local patients with hepatitis B.

Relevant Tables / Figures:

Table 1 : Baseline characteristics of the study population

Characteristics	Total (n=151)
Age, y	54.6±12.6
Male gender, n (%)	107 (70.9)
Diabetes Mellitus(115), n(%)	65 (56.5)
Hypercholesterolemia(126), n(%)	25 (19.8)
AST, IU/L	58.4 (25.0-43.0)
ALT, IU/L	46.6 (20.0-53.0)
Platelet count, 109/L	210.9±84.1
RDW	14.2±2.7
APRI	0.21 (0.13-0.41)
FIB-4	1.53 (0.92-2.51)
RPR	0.06 (0.05-0.10)
Cirrhosis present, n(%)	50 (33.1)

Figure 1: AUROC Curves for APRI, FIB-4, RPR



Test Result Variable(s)	Area	Std. Error ^a	P-Value	Asymptotic 95% Confidence Interval	
				Lower Bound	Upper Bound
APRI	0.862	0.035	<0.001	0.793	0.931
FIB-4	0.884	0.031	<0.001	0.824	0.945
RPR	0.861	0.034	<0.001	0.795	0.927

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

Table 2 : Feasibility of determining new cut-off values of APRI, FIB-4 and RPR for liver cirrhosis:

SCORE	Cut-off value	Youden index	Sensitivity (95% CI)	Specificity (95% CI)	POSITIVE LR
APRI	≥0.5	0.38	0.43 (0.26, 0.59)	0.95 (0.91, 0.99)	8.51
FIB-4	≥2.57	0.59	0.64 (0.48, 0.80)	0.95 (0.91, 0.99)	13
RPR	≥0.1	0.51	0.58 (0.42, 0.74)	0.93 (0.88, 0.98)	8.29

EFFICACY OF FOUR WEEKS TRADITIONAL ASIAN DIETARY PROGRAM ON GASTROINTESTINAL SYMPTOMS, STOOL CONSISTENCY AND STOOL OUTPUT PER WEEK IN HEALTHY VOLUNTEERS

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INTRODUCTION: Traditional Asian Diet (TAD) is composed of high fiber, moderate protein, healthy fat and fermented foods. However, the clinical benefits of TAD on gastrointestinal (GI) symptoms are not known. This study aimed to examine the efficacy of TAD on symptoms, stool consistency and stool output among healthy volunteers.

METHODOLOGY: 20 eligible women (mean age 28.5±6.9yrs) were recruited in this pilot quasi-experimental study. Participants were randomized into intervention (n=10) or control group (n=10). The intervention group was prescribed the TAD program for 4 weeks that consisted of educational session using a validated instructional diet manual and weekdays lunch supplies using designated menu. Participants in the control group were asked to maintain their habitual dietary intake. The primary outcomes were symptoms (Structured Assessment of GI Symptoms Scale or SAGIS), stool consistency (Bristol Stool Form Scale) and frequency of stool output per week. Data were tested within and between group differences at week-0 (T₀), week-2 (T₁) and week-4 (T₂) using the Friedman test. Data were presented in median ±interquartile range with $p < 0.05$ as significant.

RESULTS: For within group differences, TAD was efficacious in reducing constipation (T₀=1.0±3.0;T₁= 0.0±1.0;T₂= 0.0±1.0, $p=0.006$), total score of SAGIS (T₀= 3.0 ±12.0;T₁= 2.0±5.0;T₂= 1.5±5.0, $p=0.03$), BSFS score (T₀= 3.0±0.0;T₁= 4.0± 0.0;T₂= 4.0±0.0, $p=0.001$) and stool output per week (T₀= 3.8±2.25;T₁= 6.0±1.16;T₂= 6.1±1.30, ($p=0.005$) but no differences were found for controls (all $p > 0.05$). For between group differences, compared to controls, TAD was effective for diarrhea pre-dominant irritable bowel syndrome ($p=0.004$), constipation ($p=0.02$), BSFS score ($p < 0.0001$) and stool output per week ($p=0.003$).

CONCLUSION: The four weeks TAD program has beneficial effects on GI symptoms, stool consistency and stool output per week. Further research including gut microbiome and metabolome is required to better understand the underlying mechanisms.

Keywords: Traditional Asian Diet, gastrointestinal symptom, stool consistency, stool output

PSD_{rest} IS ACCURATE IN PREDICTING THE BALLOON EXPULSION TIME IN DEFECATORY DISORDERS: A VALIDATION COHORT STUDY

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BACKGROUND: The association between standard manometry measurements and the balloon expulsion test (BET) and defecation index (DI) is weak in defecatory disorders. The newly developed measure (PSD_{rest}) has been found to have a strong correlation with BET in a retrospective cohort. In the current study, we aimed to validate the novel PSD_{rest} measure with BET and DI in defecatory disorders.

METHODS: Consenting healthy volunteers and patients with defecatory disorders were prospectively recruited using consecutive sampling. All underwent high resolution 12-channel solid state anorectal manometry (Laborie, Mississauga, Canada) and BET. Resting pressure profiles were converted to ASCII files and examined with the MATLAB software (R2017a, The MathWorks, Natick, USA). A new metric, Power Spectral Density_{rest} (PSD_{rest}, unit V/√Hz) was developed using the Fourier transform tool. The ideal cut-off level of PSD_{rest} was determined using ROC analysis, and its correlations with defecation index (DI) and BET were analyzed using the Pearson correlation analysis, with $P < 0.05$ as significant.

RESULTS: 16 normal (mean age 26 years old) and 16 constipated (mean age 34 years old) individuals were analyzed. Of 32 individuals, 8 had normal BET (<1 min) and 24 with abnormal BET (>1 min). Those with constipation vs. normal reported lower PSD_{rest} (mean 0.80 vs. 1.04). Based on the ROC analysis, PSD_{rest} cut-off value <0.5 V/√Hz m could differentiate constipation from normal with an area under the curve (AUC) of 0.36 (95% CI 0.17- 0.56, $P=0.10$), sensitivity 43%, specificity 48%, positive predictive value 45% and negative predictive value 46%. Among constipated individuals, PSD_{rest} was correlated with BET ($R=0.42$, $P<0.001$). Negative correlation observed between PSD_{rest} and DI ($P= -0.35$) and between BET and DI ($P= -0.04$).

CONCLUSION: A PSD_{rest} value <0.5 V/√Hz predicts the presence of defecatory disorder and is correlated with abnormal BET.

LACTOBACILLUS CONTAINING CULTURED MILK DRINK AMELIORATES DEPRESSION AND GASTROINTESTINAL SYMPTOMS SEVERITY IN IRRITABLE BOWEL SYNDROME SUBJECTS

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OBJECTIVE(S): Irritable bowel syndrome (IBS) and psychiatric comorbidities have been linked for decades. Our prior study identified over 30% of IBS patients had symptoms of subthreshold depression. Despite emerging evidence supporting benefits of probiotics, the effects on coexisting conditions are under explored. Hence, the aim of this study was to evaluate the effects of probiotics on subthreshold depression in adults with IBS.

METHODOLOGY: This is a randomised, double-blind, placebo-controlled study where a total of 110 patients who fulfilled Rome IV criteria for IBS were recruited from the Gastroenterology clinic at Universiti Kebangsaan Malaysia Medical Centre (UKMMC). Depression subgroupings were determined using the Centre Epidemiologic Studies Depression Scale Revised questionnaire (CESD-R): normal (score<16), or subthreshold depression (score ≥ 16): Group A (Normal with placebo, n=29), Group B (Normal with probiotics, n=28), Group C (Subthreshold depression with placebo, n=27) and Group D (Subthreshold depression with probiotics, n=26). The patients were instructed to consume two bottles of cultured milk drinks daily contained either placebo or 10⁹ cfu L. CASEI-01 and LA-5 for 12 weeks. Depression and IBS severity were assessed using Patient Health Questionnaire (PHQ-9) and IBS Severity Scoring System (IBS-SSS) at pre- and post-12-week intervention.

RESULTS: There was a significant reduction in CESD-R scores among patients in Group C and D (p<0.05). A significant improvement of the depression severity was observed in Group A and D (p<0.05) with increased in normal mood category by 17.3% and 11.5%, respectively. At baseline, the highest percentage of IBS severity category was moderate severity in all groups with 20.8% of severe category having subthreshold depression. A significant reduction in IBS-SSS scores and severity were identified across all groups post 12-week intervention (p<0.05).

CONCLUSION(S): Consumption of 2x10⁹ cfu *lactobacillus* for 12 weeks showed a potential anti depressive property with additional effect on ameliorating IBS symptoms among IBS patients with coexisting subthreshold depression.

Keyword(s): irritable bowel syndrome; IBS; subthreshold depression; probiotics

Oral Presentations

- ID 019 THE EFFECT OF LACTOBACILLUS REUTERI PROBIOTIC AS AN ADJUNCT TREATMENT FOR HELICOBACTER PYLORI INFECTION IN ADULTS**
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- ID 029 HIGH PROPORTION OF HEPATIC STEATOSIS AND METABOLIC RISK FACTORS AMONG CHRONIC HEPATITIS B PATIENTS: THE MULTI-CENTRE CAP-ASIA STUDY**
Yong-Wen Leow¹, Wah-Kheong Chan¹, George Boon-Bee Goh², Vincent Wai-Sun Wong³, Jian Gao Fan⁴, Young Seok Kim⁵, Seung Up Kim⁶, Atsushi Nakajima⁷, Wai-Kay Seto⁸, I-Cheng Lee^{9,10}, Yi-Hsiang Huang^{9,10,11}, Yoon Jun Kim¹², Jang Jae Young¹³, Wan Cheng Chow²
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- ID 032 IMPACT OF SMALL INTESTINAL BACTERIAL OVERGROWTH IN PATIENTS WITH IRRITABLE BOWEL SYNDROME ON SYMPTOMS AND QUALITY OF LIFE**
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- ID 070 COVID-19 VACCINATION OUTCOMES IN INFLAMMATORY BOWEL DISEASE (IBD) PATIENTS - A SINGLE-CENTRE EXPERIENCE**
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ID 135 NUDT15 MUTATIONS STRONGLY PREDICT THIOPURINE-INDUCED LEUKOPENIA ACROSS DIFFERENT ASIAN ETHNICITIES: IMPLICATIONS FOR SCREENING IN A DIVERSE POPULATION

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THE EFFECT OF *LACTOBACILLUS REUTERI* PROBIOTIC AS AN ADJUNCT TREATMENT FOR *HELICOBACTER PYLORI* INFECTION IN ADULTS

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BACKGROUND: The local studies on *Helicobacter pylori* (*H. pylori*) eradication following standard triple therapy demonstrated suboptimal eradication rate with an emerging clarithromycin resistance rate from 6.8% to 14.8%. In this study, we aim to investigate the efficacy of *Lactobacillus reuteri* probiotic in improving eradication rate of *H. pylori* as well as alleviating *H. pylori*-associated gastrointestinal symptoms and treatment adverse effects.

METHODS: This was a prospective, randomised, double-blind, placebo-controlled trial involving recently diagnosed *H. pylori* patients. Patients were prescribed with standard triple therapy for 2 weeks and supplemented with either probiotic or placebo for 4 weeks. Patients were interviewed for any treatment adverse effects and given a Gastrointestinal Symptom Rating Scale (GSRS) questionnaire to answer during the study. The eradication rate post treatment was assessed via ¹⁴C urea breath test (UBT).

RESULTS: Ninety eligible subjects were recruited in the study with one drop-out (38 males, 51 females, median age: 52.0). Forty-nine-point-four percent (n=44) subjects received probiotics and 50.6% (n=45) subjects received placebo. *H. pylori* eradication rate was 93.2% in the probiotic group and 68.9% in the placebo group (p=0.007). Post-treatment GSRS scores in the probiotic group showed significant score reduction in indigestion, constipation, abdominal pain and total GSRS. The mean score reduction was as following; indigestion (4.34 ± 5.00 vs 1.78 ± 5.64, p value=0.026) abdominal pain (2.64 ± 2.88 vs 0.89 ± 3.11, p value=0.007), constipation (2.34 ± 3.91 vs 0.64 ± 2.92, p value=0.023) and total GSRS score (12.41 ± 12.19 vs 4.24 ± 13.72, p=0.004). Amongst the treatment adverse effects reported, headache and abdominal discomfort demonstrated statistically significant difference between both groups (p=0.012 and p=0.026 respectively).

CONCLUSION: The use of *Lactobacillus reuteri* as adjunct treatment in *H. pylori* infection has shown significant improvement in eradication rate, gastrointestinal symptoms and treatment adverse effects.

Keywords: *Helicobacter pylori*, probiotics, *Lactobacillus reuteri*, Gastrointestinal Symptom Rating Scale, GSRS.

HIGH PROPORTION OF HEPATIC STEATOSIS AND METABOLIC RISK FACTORS AMONG CHRONIC HEPATITIS B PATIENTS: THE MULTI-CENTRE CAP-ASIA STUDY

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OBJECTIVES: With rising metabolic syndrome, chronic hepatitis B (CHB) and non-alcoholic fatty liver disease (NAFLD) are increasingly seen together. NAFLD is associated with a high cardiovascular disease (CVD) mortality while hepatic steatosis in CHB is associated with a worse outcome. Hence, we aimed to compare the severity of liver disease, metabolic profile and CVD risk of CHB patients with and without hepatic steatosis and NAFLD patients.

METHODS: Patients with NAFLD and CHB were prospectively enrolled from ten Asian centres. Fibroscan was performed for all patients and hepatic steatosis was defined based on controlled attenuation parameter >248 dB/m. CVD risk was assessed using the Framingham risk score.

RESULTS: The data for 1080 patients were analyzed (67% NAFLD, 33% CHB). A high proportion (59%) of CHB patients had hepatic steatosis. There was a significant stepwise increase in alanine aminotransferase, aspartate aminotransferase, gamma

glutamyl transpeptidase, controlled attenuation parameter and liver stiffness measurement, from CHB patients without hepatic steatosis to CHB patients with hepatic steatosis to NAFLD patients ($p < 0.001$ for all comparisons). There was a significant stepwise increase in the proportion of patients with metabolic syndrome and in CVD risk, with very high or extreme CVD risk seen in 20%, 48% and 61%, across the groups ($p < 0.001$ between CHB patients with and without hepatic steatosis and $p < 0.05$ between CHB patients with hepatic steatosis and NAFLD patients). The treatment of metabolic risk factors among all groups was modest, with 36% of patients with diabetes mellitus not treated, and more than 50% of patients with hypertension and dyslipidaemia not treated.

DISCUSSION AND CONCLUSION: A high proportion of CHB patients were found to have hepatic steatosis, which was associated with more severe liver disease, worse metabolic abnormalities and higher CVD risk. Therefore, such patients should be diagnosed to assess and manage their disease and metabolic risk factors accordingly for a better long-term outcome.

IMPACT OF SMALL INTESTINAL BACTERIAL OVERGROWTH IN PATIENTS WITH IRRITABLE BOWEL SYNDROME ON SYMPTOMS AND QUALITY OF LIFE

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INTRODUCTION: Small intestinal bacterial overgrowth (SIBO) is recognised to be associated with irritable bowel syndrome (IBS). The impact of SIBO on the symptoms and health-related quality of life (HRQOL) in patients with IBS is still unknown.

METHODOLOGY: A prospective study of consecutive adults who had a glucose hydrogen breath test was conducted. Factors associated with SIBO were evaluated. Symptom and HRQOL of IBS patients with and without SIBO were compared. The independent factors associated with severe IBS (i.e. IBS symptom severity score: IBS-SSS>300) were explored.

RESULTS: A total of 160 subjects were recruited (median age 50 years and males 31.3%). 53.8% and 33.8% of them had IBS and diarrhea-predominant IBS (IBS-D) respectively. SIBO was diagnosed in 22.5% of the study population. IBS-D was associated with SIBO (50.0% vs 29.0%, $p=0.019$).

Amongst IBS patients, severe IBS was associated with SIBO (36.4% vs 15.6%, $p=0.043$). IBS patients with SIBO had a trend towards a greater IBS-SSS compared to those without SIBO [245 (125-330) vs 200 (140-268), $p=0.280$]. The presence of SIBO was associated with poorer HRQOL (EQ-5D utility score 0.73 (0.69-0.78) vs 0.80 (0.73-1.00), $p=0.025$).

The presence of SIBO (44.4% vs 20.6%, $p=0.043$), anxiety (77.8% vs 39.7%, $p=0.004$) and depression (50.0% vs 19.1%, $p=0.011$) were associated with severe IBS at univariate analysis. However, SIBO was the only independent factor associated with severe IBS at multivariate analysis [OR:3.83 (95%CI:1.02-14.34), $p=0.046$].

DISCUSSION: Although the association of SIBO and IBS were explored in previous studies, the findings of a negative impact of SIBO amongst IBS patients' symptom severity and HRQOL is novel. These findings support the potential benefit of screening for SIBO on IBS patients, in particular those with IBS-D and severe form of IBS.

CONCLUSION: IBS-D was significantly associated with SIBO. The co-existence of SIBO had a significant negative impact on IBS patients.

COVID-19 VACCINATION OUTCOMES IN INFLAMMATORY BOWEL DISEASE (IBD) PATIENTS - A SINGLE-CENTRE EXPERIENCE

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INTRODUCTION: The novel coronavirus SARS-CoV-2 (COVID-19) is a global pandemic and mass vaccination is crucial in the war against it. Patients with IBD are considered a high-risk group because of chronic immunosuppressive therapy and theoretical risk of autoimmune flares following vaccine.

OBJECTIVES:

- (i) To identify the rate of covid-19 vaccination among patients with inflammatory bowel disease.
- (ii) To identify the rate of Covid-19 infection among patients with IBD
- (iii) To identify the outcome post covid vaccination, including flare of disease and severity of Covid-19 infection.

METHODOLOGY: This was a cross-sectional single-center study conducted in University Malaya Medical Centre in which all IBD patients who visited the outpatient IBD clinic from 1st May 2021 to 31st Dec 2021 were recruited. Demographic, clinical data, Covid-19 vaccination status and outcomes were collected.

RESULTS: There is a total of 393 IBD patients in UMMC, in which 256 patients had visited our outpatient IBD clinic during the study period. 253 patients were finally included.

The demographics and clinical characteristics of recruited patient are listed in Table 1. Majority of our patients were male (55.7%), Indian (41.9%) and has Crohn's disease (57.3%). 48.6 % of patients were on immunosuppressive therapy, in which 45.8% were on azathioprine. 25.7% patients were on biologics, in which majority were on infliximab.

250 patients (98.8%) had their COVID-19 vaccinations, which was mainly Pfizer (65.2%). 16 patients (6.3%) had flare of symptoms post vaccine. Only 18 patients (7.1%) had COVID-19 infection, in which majority of them had category 1 Covid-19 (66.7%). 11 patients (4.3%) and 7 (2.8%) patients had the infection prior and after the vaccination respectively.

CONCLUSION: Our study showed reassuring data that IBD patients do not have a significant risk of developing Covid-19 infection or having a severe outcome from Covid. In addition, Covid vaccine did not result in significant flares.

Table 1: Demographics and clinical characteristics of the study patients

Demographic and clinical characteristics		IBD patients, n=253
Age, years (mean±SD)		30.9 ± 10.1
Gender, n(%)	Male	141 (55.7%)
	Female	112 (44.3%)
Ethnicity, n(%)	Malay	63 (24.9%)
	Chinese	82 (32.4%)
	Indian	106 (41.9%)
	Others	2 (0.8%)
IBD Type, n(%)	Crohn's Disease	145 (57.3%)
	Ulcerative Colitis	108 (42.7%)
Immunosuppressants, n(%)	Azathioprine	116 (45.8%)
	6-MP	3 (1.2%)
	Methotrexate	4 (1.6%)
Biologics, n(%)	Infliximab	31 (12.3%)
	Adalimumab	3 (1.2%)
	Vedolizumab	6 (2.4%)
	Ustekinumab	25 (9.9%)
5-ASA, n(%)		63 (24.9%)
Covid-19 Vaccination, n(%)	Yes	250 (98.8%)
	No	3 (1.2%)
Type of Vaccine, n(%)	Pfizer	165 (65.2%)
	Sinovac	61 (24.1%)
	AstraZeneca	24 (9.5%)
IBD Flare, n(%)		16 (6.3%)
Covid-19 infection, n(%)		18 (7.1%)
	Before Vaccination	11 (4.3%)
	After Vaccination	7 (2.8%)
Covid-19 infection severity, n(%)	Category 1	12 (4.7%)
	Category 2	4 (1.6%)
	Category 3	1 (0.4%)
	Category 4	0
	Category 5	0
	N/A	1 (0.4%)

LONG-TERM CLINICAL OUTCOMES OF ADULTS WITH BIOPSY-PROVEN METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE: A SINGLE-CENTRE PROSPECTIVE COHORT STUDY

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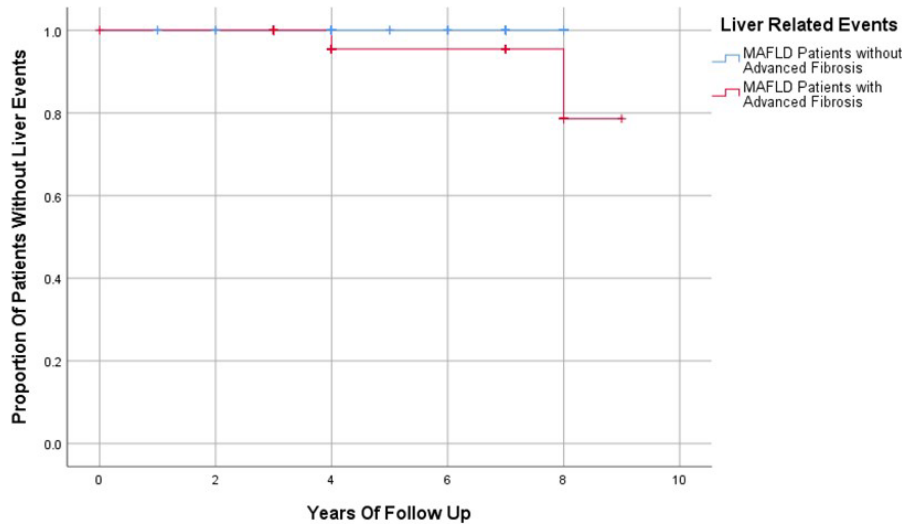
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INTRODUCTION: There are limited local data on the long-term clinical outcomes of adults with metabolic dysfunction-associated fatty liver disease (MAFLD).

METHODOLOGY: This is a single-centre prospective study of a well-characterized cohort of biopsy-proven MAFLD patients. Non-alcoholic steatohepatitis was defined as presence of steatosis, lobular inflammation, and hepatocyte ballooning (\geq grade 1 each). Advanced liver fibrosis was defined as histological fibrosis stage 3 or 4. The patients were followed every 6 – 12 months for cardiovascular events, liver-related events, malignancy, and mortality.

RESULTS AND DISCUSSION: The data for 202 patients were analyzed (mean age 53.7 ± 11 years, 47.5% male, 88.6% obese, 71.3% diabetes mellitus, 76.7% NASH, 27.2% advanced liver fibrosis). The median follow-up interval was 7 years (range 1 - 9 years). The rates of cardiovascular events, malignancy, liver-related events, and mortality was 2.49, 0.69, 0.43, and 0.60 per 100 person-years of follow-up, respectively. Liver-related events were only seen in patient with advanced liver fibrosis at 9.1% vs 0% in patient without advanced liver fibrosis ($p=0.001$). Advanced liver fibrosis was not associated with cardiovascular events, malignancy, or mortality. NASH was not associated with cardiovascular events, malignancy, liver-related events, or mortality.



Number at Risk					
MAFLD Patient Without Advanced Fibrosis	147	145	127	85	49
MAFLD Patient With Advanced Fibrosis	55	54	44	25	17
Total	202	199	171	110	66

CONCLUSION: The overall liver-related event rate in MAFLD patients is low, but it is significantly higher among patients with advanced liver fibrosis. Cardiovascular disease is the leading cause of mortality in MAFLD patients.

Keywords: MAFLD; liver biopsy; outcome; cardiovascular event; liver-related event

DEVELOPMENT AND VALIDATION OF CULTURALLY SPECIFIC GUIDED IMAGERY AND PROGRESSIVE MUSCLE RELAXATION AUDIO SCRIPTS FOR FUNCTIONAL BLOATING

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OBJECTIVE(S): Mind-body techniques, including Guided Imagery (GI) and Progressive Muscle Relaxation (PMR) are known therapeutic modalities for various disorders. However, its efficacy in patients with disorders of gut-brain interaction (DGBI) is unexplored. The study herein aimed to develop, validate, and explore the efficacy of audio-based GI and PMR techniques in functional bloating.

METHODOLOGY: Initially, the audio scripts were developed according to literature reviews and findings from in-depth interviews of 37 participants with bloating based on the Rome IV criteria. Scripts were written by health psychologists and narrated in the local dialect. Suitability of music was rated using the Brunel Music Rating Inventory-2 (BMRI-2). The audio was camouflaged with binaural alpha waves pulse using Audacity version 2.4.0 to facilitate delivery. The audio scripts were then validated using psychometric parameters properties (content and face validity index) among seven experts from related fields and 32 patients (mean age = 35.57 ± 14.28, 8 men, 24 women). Physiological parameters [(brain event-related potentials (ERP) & heart rate variability (HRV)] were tested among 20 healthy volunteers.

RESULTS: A major finding from in-depth interview was that 'balloon' being a synonymous imagery description for bloating, of which the sensation from that 'balloon' was associated with pain. Overall, the content and face validity index for PMR and

GI ranged from 0.92 - 1.00. For ERP and HRV, 17/20 participants were analyzed. For ERP, there were significant differences between GI and PMR in alpha waves ($p=0.029$) and delta waves ($p=0.029$) and between PMR and control in delta waves ($p=0.014$). For HRV, both GI and PMR exhibited similar autonomic responses over controls with significant difference among Low Frequency/High Frequency ratio, Total Power, Low Frequency, and Respiratory Rate (overall $p<0.05$).

DISCUSSION AND CONCLUSION(S): The newly developed GI and PMR techniques are validated using psychometric and physiological approaches.

Keywords: Guided Imagery, Progressive Muscle Relaxation, Functional Abdominal Bloating, Functional Gastrointestinal Disorders (FGID), Disorder of Gut-Brain Interaction (DGBI), Psychological Interventions

NUDT15 MUTATIONS STRONGLY PREDICT THIOPURINE-INDUCED LEUKOPENIA ACROSS DIFFERENT ASIAN ETHNICITIES: IMPLICATIONS FOR SCREENING IN A DIVERSE POPULATION

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INTRODUCTION: Thiopurines, which are immunosuppressive drugs for maintaining remission for inflammatory bowel disease, are known to cause myelotoxicity in patients with NUDT15 genetic variants in some Asian countries with monoethnic population.

OBJECTIVE: We aim to investigate the association of NUDT15 variants with leukopenia in a multiethnic population in Southeast Asia.

METHODS: Patients with a confirmed diagnosis of inflammatory bowel disease were recruited. We collected demographic and clinical characteristics, and whole blood counts before and after initiating thiopurines. TPMT and NUDT15 genotype were analyzed with SNPs genotyping assay. Leukopenia was defined as white cell count < 3000/L.

RESULTS: 19 of the 102 (18.6%) patients who had adequate thiopurines therapy experienced leukopenia, 11 (57.9%) have NUDT15 c.415C>T variants, 2 (10.5%) have NUDT15 c.52G>A variants while one (5.3%) have TPMT variation. Individually, NUDT15 c.415C>T had a sensitivity and specificity of 57.9% and 94.0% (OR=21.45, 95% CI 5.94 - 77.41, p<0.001), respectively of predicting thiopurine-induced leukopenia while NUDT15 c.52G>A were only observed in patients with leukopenia. As compared to patients with wildtype NUDT15, both NUDT15 variations had a combined sensitivity and specificity of 68.4% and 94% respectively (OR=33.80, 95% CI 8.99-127.05, p<0.001) of predicting thiopurine-induced leukopenia as well as a shorter onset to leukopenia (median onset [months] 5.5 versus 2.0; p=0.045). Sub-group analysis showed that both NUDT15 variations was strongly associated with leukopenia among the Chinese and Indians but not among the Malays.

CONCLUSION: NUDT15 variants strongly predicted thiopurine-induced leukopenia across a multiethnic Southeast Asian population, particularly among the Chinese and Indians.

Poster Presentations

- ID 004 DEVELOPMENT AND VALIDATION OF THE ADULT CIRRHOSIS KNOWLEDGE QUESTIONNAIRE (ASK-Q)**
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- ID 006 CLINICAL OUTCOME OF FUNCTIONAL GASTROINTESTINAL DISORDERS IN SECONDARY CARE: A LONGITUDINAL STUDY**
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- ID 008 CYTOMEGALOVIRUS (CMV) COLITIS IN END-STAGE RENAL DISEASE (ESRD) PATIENT WITH RECENT SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2 (SARS-CoV2) INFECTION**
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- ID 009 CASE OF EOSINOPHILIC COLITIS AFTER BNT162b2 mRNA COVID-19 VACCINATION**
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- ID 010 EFFICACY OF INTRAVENOUS USTEKINUMAB INDUCTION AND SHORTENED DURATION OF ADMINISTRATION AS SALVAGE THERAPY FOR CROHNS DISEASE**
Thomas Koshy, Rosaida Hj Md Said, Haniza binti Bahar, Nik Razima Wan Ibrahim, Lim Ee Keng, Liew Chiat Fong, Selva Yuwaraj Vadioaloo
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- ID 011 EFFECT OF COVID 19 PANDAEMIC ON TREATMENT OUTCOME OF HEPATITIS C PATIENTS ON DAA - A SINGLE CENTRE EXPERIENCE**
Liew Chiat Fong, Selva Yuwaraj, Thomas Koshy, Lim Ee Keng, Nik Razima Wan Ibrahim, Norhaniza Bahar, Rosaida Hj Md Said
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Poster Presentations

- ID 012 LIVER DYSFUNCTION IN ADULT COVID-19 INFECTION - A COMPARISON BETWEEN DELTA VARIANT AND PREDECESSOR STRAINS**
Ruveena Rajaram¹, Ram Prasad Sinnanaidu², Khoo Xin Hui¹, Nisha Puvanendran¹, Anjanna Kukreja³, Bushra Megat Johari³, Sazali Basri³, Ng Rong Xiang³, Ong Han Cheng³, Wong Pui Li³, Sharifah Faridah Syed Omar³, Shasheela Ponnampalavanar³, Sanjiv Mahadeva¹
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- ID 013 DIAGNOSTIC PERFORMANCE OF TWO NON-INVASIVE BIOMARKERS USED INDIVIDUALLY AND IN SEQUENTIAL COMBINATION FOR CIRRHOSIS ASSOCIATED WITH HEPATITIS C**
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- ID 014 CASE REPORT: I THOUGHT IT WAS CROHNS, BUT...**
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- ID 015 PNEUMATOSIS CYSTOIDES INTESTINALIS(PCI): A CASE REPORT**
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- ID 016 SERONEGATIVE AUTOIMMUNE HEPATITIS**
Lew Ken Guan, Azlida Che Aun, Sooi Choong Yeong
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- ID 017 ARSENIC TOXICITY - AN UNCOMMON CAUSE OF LIVER INJURY: A CASE REPORT**
Soo Poh Lee, Mohamad Fadli bin Abdul Rahman
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- ID 018 VALIDATION OF THE HEPAMET FIBROSIS SCORE IN A MULTI-ETHNIC ASIAN POPULATION**
Shi-En Chong¹, Felicia Chang¹, Kee-Huat Chuah¹, Pavai Sthaneshwar², Nik Raihan Nik Mustapha³, Sanjiv Mahadeva¹, Wah-Kheong Chan¹
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Poster Presentations

- ID 021 TERLIPRESSIN INDUCED RHABDOMYOLYSIS AND SKIN NECROSIS**
Ruben Skantha
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- ID 024 CASE REPORT: AMOEBIC COLITIS- THE MIMICKER OF INFLAMMATORY BOWEL DISEASE**
Kay-Keng Tan, Phei-Onn Tan, Fauziah bt Jaya, Tse-Hui Chow
Gastroenterology Unit, Medical Department, Hospital Raja Permaisuri Bainun, Perak, Malaysia
- ID 025 PREVALENCE OF BARRETT'S ESOPHAGUS (BE) AND ITS PROFILE IN MULTIETHNICITY MALAYSIAN POPULATION**
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- ID 026 PREVALENCE OF HIATAL HERNIA (HH) IN MALAYSIA: ASSOCIATION WITH AGE AND OTHER ESOPHAGEAL ABNORMALITIES?**
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- ID 027 BARRIERS TO THE DONATION OF LIVING DONATION LIVER TRANSPLANTATION (LDLT): HOSPITAL KUALA LUMPUR'S (HKL) EXPERIENCE**
Noor Aliza binti Abd Mutalib
Gastroenterology Unit, Medical Department, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia
- ID 028 CHARACTERIZING HEPATOCELLULAR CARCINOMA (HCC) CASES AND SURVIVAL ANALYSIS IN MALAYSIA**
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Poster Presentations

- ID 031** **BIOLOGIC EXPOSURE OF SHORT DURATION RESULTS IN A MARKED REDUCTION IN CUMULATIVE SURGICAL RATES IN MALAYSIAN PATIENTS WITH INFLAMMATORY BOWEL DISEASE**
Nik Arsyad Nik Muhamad Affendi^{1,2}, Khoo Xin Hui¹, Chuah Kee Huat¹, Ida Normiha Hilmi¹
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- ID 034** **GASTROINTESTINAL ENDOSCOPY IN A TERTIARY HEART INSTITUTE**
Philip Pang¹, Low Ming Yoong², Goay Swee En², Ong Siew Hoon², Azmee Mohd Ghazi², Law Kian Boon³, Nor Hidayah Binti Hassan¹, Rugayah Binti Kasim¹, Nagananthini A/P Muthusamy¹, Norjannah Binti Ali¹, Jasminder Sidhu¹, Noor Aliza Bt Mutalib¹, Gew Lai Teck¹
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- ID 035** **A CASE OF SEVERE CMV COLITIS COMPLICATED WITH SEPTIC SHOCK, MEGACOLON AND PERFORATION IN AN IMMUNOCOMPETENT PRISONER**
Tian Ming Yeo¹, Joash Tan-Loh², Kuang Kiat Kiew¹, Zalwani Zainuddin¹
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- ID 036** **DETECTION OF EXPRESSED PRO-INFLAMMATORY CYTOKINE INTERLEUKIN-32 IN GASTRIC CANCER PATIENTS FROM UKM MEDICAL CENTRE (UKMMC) USING IMMUNOHISTOCHEMISTRY (IHC)**
Nabilah Hisham¹, Alfizah Hanafiah¹, Tan Geok Chin², Nik Ritza Kosai bin Nik Mahmood³, Muaatamarulain Mustangin⁴
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- ID 037** **THE COLD REVOLUTION IN EVOLUTION**
Prakash Narayanan, Keng Hoong Chiam, Valentine Philiminus, Hendrita Malidin, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 038** **ACCURACY OF NICE PREDICTION FOR DIMINUTIVE COLORECTAL POLYPS - A STEP FORWARDS TO EMBRACING ARTIFICIAL INTELLIGENCE**
Prakash Narayanan, Keng Hoong Chiam, Valentine Philiminus, Hendrita Malidin, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia

Poster Presentations

- ID 039 TRADITIONAL SERRATED ADENOMA - FACING THE FUTURE PROSPECTS OF OPTICAL DIAGNOSIS TO PREVENT OVERTREATMENT**
Prakash Narayanan, Keng Hoong Chiam, Zi Xuan Wong, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 040 TURNING DOWN THE HEAT FOR A PATIENT WITH 120 POLYPS - A CASE REPORT**
Prakash Narayanan, Keng Hoong Chiam, Valentine Philiminus, Janice Sylvia Lo, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 041 COMPLEX ENDOSCOPIC COLORECTAL POLYPECTOMY; FIRST-HAND ACCOUNT IN HUNDRED CASES**
Cha Chee Tan, Keng Hoong Chiam, Valentine Philiminus, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 042 ACCURACY OF JNET PREDICTION FOR COMPLEX COLORECTAL POLYPS**
Cha Chee Tan, Keng Hoong Chiam, Valentine Philiminus, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 043 OVER-THE-SCOPE-CLIPS (OTSC) IN DAILY ENDOSCOPIC ROUTINE**
Subita Sugantal Suparmanian, Keng Hoong Chiam, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 044 OPTIMIZING THE DETECTION OF SESSILE SERRATED ADENOMA WITH THE MODIFIED SANO CLASSIFICATION**
Cha Chee Tan, Keng Hoong Chiam, Janice Sylvia Lo, Zi Xuan Wong, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 045 TECHNICAL CHALLENGES OF POLYLOOP-ASSISTED POLYPECTOMY - CASE SERIES IN A SINGLE CENTRE EXPERIENCE**
Subita Sugantal Suparmanian, Keng Hoong Chiam, Valentine Philiminus, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 046 ACCELERATED DOSE OF USTEKINUMAB AS RESCUE THERAPY IN ACUTE SEVERE ULCERATIVE COLITIS**
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Poster Presentations

- ID 047 AN UPDATE OF REGISTRY FOR PATIENTS WITH INFLAMMATORY BOWEL DISEASE AT UKM MEDICAL CENTRE, KUALA LUMPUR**
Muhammad Amzan Muhammad Fauzi¹, Kok Wie Hao¹, Lee Chong Chearn¹, Ng Inn Shan¹,
Khairul Najmi Muhammad Nawawi¹, Wong Zhiqin¹, Ismail Sagap², Zairul Azwan Mohd Azman², Hamzaini Abdul Hamid³,
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- ID 048 WHEN IS POEM TRULY EQUIVALENT TO LHM? A COMPARISON OF COMPLICATION RATES DURING THE LEARNING CURVE**
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- ID 049 ARE ALL COLD SNARES THE SAME IN THE ERA OF COLD REVOLUTION?**
Daniel Ching, Keng Hoong Chiam, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 050 THE PI3K-INHIBITOR BUPARLISIB SUPPRESSED PROLIFERATION AND INDUCED APOPTOSIS IN COLITIS-ASSOCIATED CANCER MICE MODEL**
Nurul Nadirah Razali¹, Azyani Yahya², Raja Affendi Raja Ali^{3,4}, Khairul Najmi Muhammad Nawawi^{3,4},
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- ID 051 PALM TOCOTRIENOL-RICH FRACTION SIGNIFICANTLY IMPROVE TRANSAMINASE LEVELS, HEPATIC STEATOSIS AND INFLAMMATION SCORES IN PATIENTS WITH METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE: A RETROSPECTIVE REAL-WORLD STUDY**
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- ID 053** **EPIDEMIOLOGY, PSYCHOLOGICAL AND HEALTHCARE BURDEN OF IRRITABLE BOWEL SYNDROME: A CROSS-SECTIONAL STUDY**
Ruben Skantha, Kee Huat Chuah, Vikneshwaran Chandra Kumar, Xin Hui Khoo, Wen Xuan Hian, Sanjiv Mahadeva
Gastroenterology and Hepatology Unit, Department of Medicine, University Malaya Medical Centre, Kuala Lumpur, Malaysia
- ID 055** **PREVALENCE OF INCREASED LIVER STIFFNESS MEASUREMENT (LSM) AND ITS ASSOCIATED FACTORS IN STABLE HEART FAILURE WITH REDUCED EJECTION FRACTION (HFREF): A SINGLE-CENTRE STUDY FROM MALAYSIA**
Afifah Suhailah Awang Soh¹, Hafisyatul Aiza Zainal Abidin^{1,2}, Rafiz Abdul Rani^{1,3}, Mohd Shahril Ahmad Saman⁴, Muhammad Ilham Abdul Hafidz^{1,3}, Chandramouli Annamalai^{1,3}, Sazzli Shahlan Kasim^{1,2}, Thevaraajan Jayaraman^{1,3}
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- ID 056** **DIAGNOSTIC CHALLENGES OF ANTI-MITOCHONDRIAL ANTIBODY NEGATIVE PRIMARY BILIARY CHOLANGITIS IN NON TERTIARY CENTRE**
Mohd Puad A A¹, Khairulnisa M R¹, Ng S H¹, Sobri S S², Mohamed S H¹
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²*Pathology Department, Hospital Tuanku Fauziab, Perlis, Malaysia*
- ID 057** **PRIMARY BILIARY CIRRHOSIS, AUTOIMMUNE HEPATITIS AND ITS OVERLAP SYNDROME - A DIAGNOSTIC DILEMMA; A CASE REPORT OF PRIMARY BILIARY CIRRHOSIS COMPLICATED BY AZATHIOPRINE INDUCED TOXICITY**
Mohd Rozali K N¹, Mohd Puad A A¹, Ng S H¹, Sobri S S², Mohamed S H¹
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- ID 058** **RECOGNITION OF AUTOIMMUNE HEPATITIS AND PRIMARY BILIARY CHOLANGITIS OVERLAP SYNDROME**
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- ID 059** **IMPACT OF FUNCTIONAL DYSPEPSIA IN PRIMARY VERSUS SECONDARY CARE: A CROSS-SECTIONAL STUDY**
C Vikneshwaran Chandra Kumar, Kee Huat Chuah, Ruben Skantha, Xin Hui Khoo, Wen Xuan Hian, Sanjiv Mahadeva
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- ID 060 AMOEBIC COLITIS IN STEROID-TREATED COVID-19 PNEUMONIA: A CASE REPORT**
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- ID 062 THE TRIALOGUE BETWEEN RISK PERCEPTION, LIFESTYLE AND GUT DYSBIOSIS IN POST-GESTATIONAL DIABETES WOMEN: A FRONTIER IN PREVENTIVE STRATEGY**
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- ID 063 PROBIOTICS MAY HAVE CONTRIBUTE TO THE EXPRESSION CHANGE OF INTESTINAL MUCOSAL INFLAMMATORY CYTOKINES AND INTESTINAL PERMEABILITY BIOMARKERS IN NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) PATIENTS - A RANDOMIZED CONTROLLED TRIAL**
Nurainina Ayob¹, Khairul Najmi Muhammad Nawawi^{2,3}, Raja Affendi Raja Ali^{2,3}, Mohamad Hizami Mohamad Nor², Zhiqin Wong^{2,3}, Norfilza Mohd Mokhtar^{1,3}
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- ID 064 PRIMARY HEPATIC LYMPHOMA - A RARE DISEASE**
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- ID 065 CONSUMPTION - A RARE CASE OF PRIMARY PANCREATIC TB**
Rakesh Lingam, Jasminder Sidhu
Hospital Kuala Lumpur, Kuala Lumpur, Malaysia
- ID 066 EXPLORING COLONIC MUCOSAL MICROBIOTA POPULATION IN EARLY-ONSET COLORECTAL CANCER**
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ID 067 REGULATION OF INTESTINAL BARRIER FUNCTION GENES IN INFLAMMATORY BOWEL DISEASE TREATED WITH VEDOLIZUMAB

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ID 068 SMALL PANCREATIC INSULINOMA DETECTED ONLY BY ENDOSCOPIC ULTRASOUND

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ID 069 BETA BLOCKER UTILISATION IN AN ADULT ENDOSCOPIC VARICEAL SURVEILLANCE PROGRAM: A SINGLE CENTRE 8-YEAR EXPERIENCE

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ID 071 BOTTLE GOURD POISONING MIMICKING AN ACUTE ABDOMEN: A CASE REPORT

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ID 072 LIVER INJURY IN HOSPITALISED PATIENT WITH COVID-19 INFECTION: A SINGLE CENTRE STUDY

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ID 073 NOVEL NARROW-BAND IMAGING DESCRIPTION OF RECTAL NEUROENDOCRINE TUMORS - THE TREE-ON-SUNSET APPEARANCE

Shih Mun Yong, Keng Hoong Chiam, Raman Muthukaruppan

Queen Elizabeth Hospital, Sabah, Malaysia

ID 074 A RARE CASE REPORT OF DUODENAL HISTOPLASMOSIS

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- ID 075 DEMOGRAPHICS OF COLORECTAL CANCER IN SABAH DURING THE COVID-19 PANDEMIC - CAN NBI IMPROVE DIAGNOSTIC YIELD TO REDUCE SCOPE BURDEN?**
Shih Mun Yong, Keng Hoong Chiam, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 076 LESSONS LEARNT FROM THE STRUGGLES AND CHALLENGES IN INTRODUCING ENDOSCOPIC SUBMUCOSAL DISSECTION DURING THE COVID-19 PANDEMIC**
Shih Mun Yong, Keng Hoong Chiam, Valentine Philiminus, Hendrita Malidin, Raman Muthukaruppan
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- ID 077 A RARE CASE OF GANODERMA LUCIDUM (LINGZHI)-RELATED CHOLESTATIC LIVER INJURY - A CASE REPORT**
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- ID 078 ENTECAVIR DRUG-RESISTANT MUTATIONS AMONG PATIENTS WITH CHRONIC HEPATITIS B VIRUS INFECTION IN HOSPITAL UNIVERSITI SAINS MALAYSIA**
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- ID 079 ACCURACY OF NICE PREDICTION FOR SMALL COLORECTAL POLYPS - THE SWEET SPOT FOR HIGHER ACCURACY**
Shih Mun Yong, Keng Hoong Chiam, Prakash Narayanan, Valentine Philiminus, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 080 EOSINOPHILIC COLITIS: A RARE BUT TREATABLE DISEASE OF GASTROINTESTINAL TRACT**
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- ID 081 SURVIVAL OF COLORECTAL CANCER PATIENTS IN MALAYSIA: RESULT FROM NATIONAL CANCER REGISTRY**
Nor Asiah Muhamad¹, Nur Hasnah Ma'amor¹, Mohd Azri Mohd Suan², Izzah Athirah Rosli¹, Muhammad Radzi Abu Hassan²
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- ID 084 LIVER STIFFNESS IMPROVEMENT AFTER ACHIEVED SVR12 AMONG CHRONIC HEPATITIS C PATIENT**
Ahmad Syahidan
Hospital Sultanah Nur Zahirah, Terengganu, Malaysia
- ID 085 LIVER DYSFUNCTION BEYOND COVID-19 INFECTION: A LONGITUDINAL FOLLOW-UP STUDY**
Ruveena Rajaram¹, Thevarajaan Jayaraman², Xin-Hui Khoo¹, Nalliah Saravanaa¹, Anjanna Kukreja³, Bushra Megat Johari³, Nadia Fareeda Muhammad Gowdh⁴, Wai-Kin Lee⁵, Choong-Yeong Sooi⁶, Sazali Basri³, Rong-Xiang Ng³, Hang-Cheng Ong³, Pui-Li Wong³, Sharifah Faridah Syed Omar³, Sanjiv Mahadeva¹
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⁵Medical Department, Hospital Seberang Jaya, Pulau Pinang, Malaysia
⁶Medical Department, Hospital Tengku Ampuan Afzan, Pahang, Malaysia
- ID 086 HIGHER RELATIVE ABUNDANCE OF BACTEROIDETES AND SUTTERELLA AND LOWER BIFIDOBACTERIUM SPECIES IN VEDOLIZUMAB-RESISTANCE INFLAMMATORY BOWEL DISEASE PATIENTS**
Low Wei Hong¹, Nurul Aqilah Shahabudin¹, Raja Affendi Raja Ali^{2,3}, Norfilza M Mokhtar^{1,2}
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- ID 087 EOSINOPHILIC GASTROENTERITIS MIMICKING SMALL BOWEL OBSTRUCTION: A CASE REPORT**
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- ID 088 A RETROSPECTIVE REVIEW OF CHICAGO 3 ESOPHAGEAL MOTILITY DIAGNOSIS IN PATIENTS WITH NON OBSTRUCTIVE DYSPHAGIA - A SINGLE CENTRE EXPERIENCE**
Naveen R¹, Siti Norhasliza¹, Azliani¹, Nashrulhaq Tagiling^{1,2}, T A Iskandar^{1,2}, Lee YY^{1,2}
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- ID 095 CASE OF A FLARE OF HEPATITIS B IN A PATIENT WHO IS ON TENOFOVIR TREATMENT**
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- ID 097 CHALLENGES IN DIFFERENTIATING DRUG-INDUCED LIVER INJURY AND HEPATITIS E INFECTION: A CASE REPORT**
Hazwani Ismail, Su Yin Lau
Department of Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia
- ID 098 CYSTIC HEPATIC METASTASES: A RARE MIMIC OF LIVER ABSCESSSES**
Wan Muhamad Amir Wan Md Zin, Su Yin Lau
Department of Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia
- ID 099 AN UNEXPECTED CAUSE OF EXTERNAL BILIARY DUCT COMPRESSION - A CASE REPORT**
Janice Sylvia Lo, Cha Chee Tan, Dayang Corieza Febriany, Nagaraj Sriram, Raman Muthukaruppan
Queen Elizabeth Hospital, Sabah, Malaysia
- ID 100 OVERCOMING THE FRUSTRATIONS OF NASOENTERIC TUBE DEPLOYMENT; REPLACING OVER-THE-GUIDEWIRE TECHNIQUE WITH THE MORE EFFICIENT AND TIME-SAVVY THERAPEUTIC GASTROSCOPE METHOD**
Valentine Philiminus, Shih Mun Yong, Keng Hoong Chiam, Raman Muthukaruppan
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- ID 101 ONE-YEAR PHYLLANTHUS NIRURI SUPPLEMENTATION IN MILD-TO-MODERATE NON-ALCOHOLIC FATTY LIVER DISEASE: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL**
Ying-Zhuang Ng¹, Muhammad Radzi Abu Hassan^{1,2}, Rosaida Hj Md Said³, Zalwani Zainuddin¹, Haniza Omar⁴, Siti Maisarah Md Ali², Siti Aishah Aris², Huan-Keat Chan²
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- ID 102 HEMOPHAGOCYTTIC LYMPHOHISTIOCYTOSIS FOLLOWING SARS-CoV-2 BOOSTER VACCINATION WITH LIVER INVOLVEMENT**
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- ID 104 INFLUENCE OF MIRTAZAPINE ON GASTRIC ACCOMMODATION AND GASTRIC EMPTYING: A MECHANISTIC STUDY IN HEALTHY VOLUNTEERS**
Nashrulhaq Tagiling¹, Norazlina Mat Nawi^{1,3}, Yeong Yeh Lee^{2,3}, Yusri Udin¹, Nur-Fazimah Sahran², Tengku Ahmad Iskandar Tengku Alang², Naveen Ramasami³, Azliani Abd Aziz³, Siti Norhasliza Muhamad³
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- ID 105 RE-EVALUATION OF MANOMETRY AND SYMPTOMS POST BOTOX INJECTION VERSUS STANDARD MEDICAL THERAPY FOR JACKHAMMER OESOPHAGUS (JE) IN HOSPITAL KL**
Chen Zhi Tian, Gew Lai Teck, Ng Keat Keng
Department of Gastroenterology, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia
- ID 106 SYMPTOMATIC BRUNNER GLAND HYPERPLASIA: A RARE BENIGN LARGE DUODENAL BULB MASS**
Yu Peng Tan, Chin Wen Yap, Koon Ket Sia
Hospital Ampang, Selangor, Malaysia
- ID 107 HEPATITIS B FLARES IN PATIENT WITH HEMATOLOGICAL DISORDER POST CHEMOTHERAPY**
Yun Jian Foo, Yu Peng Tan, Koon Ket Sia
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- ID 110 DEMOGRAPHICS AND CHARACTERISTICS OF ENDOSCOPIC FINDINGS AMONG COVID 19 PATIENTS WITH UPPER GASTROINTESTINAL BLEEDING IN A SINGLE CENTRE**
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- ID 111 PARADOXICAL AUTOIMMUNITY - “AUTOIMMUNE HEPATITIS IN PRIMARY IMMUNODEFICIENCY”**
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- ID 112 A SINGLE CENTRE STUDY ON THE ETIOLOGIES AND RISK FACTORS OF PATIENTS WITH ACUTE VARICEAL BLEEDING**
Tian Ming Yeo, Kuang Kiat Kiew, Zalwani Zainuddin
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- ID 113 AUDIT OF THE INVESTIGATION OF IRON DEFICIENCY ANEMIA IN A TEACHING UNIVERSITY HOSPITAL**
Lee Chong Chearn¹, Khairul Najmi Muhammad Nawawi¹, Stephanie Ooi Han Nee³, Kok Wei Hao¹, Ng Inn Shann², Wong Zhiqin¹, Raja Affendi Raja Ali¹
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- ID 114 EFFICACY, SAFETY AND PERSISTENCE OF USTEKINUMAB VERSUS INFLIXIMAB IN BIONAÏVE PATIENTS WITH MODERATE TO SEVERE CROHN DISEASE PATIENTS: A REAL WORLD EXPERIENCE**
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- ID 115 THE USE OF NON-INVASIVE TESTS COMPARED WITH HISTOLOGICAL FIBROSIS STAGE IN PREDICTING LIVER-RELATED EVENTS IN METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE**
Wah-Loong Chan¹, Shi-En Chong¹, Felicia Chang¹, Kee-Huat Chuah¹, Nik Raihan Nik Mustapha², Sanjiv Mahadeva¹, Wah-Kheong Chan¹
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- ID 117 PLUG-ASSISTED RETROGRADE TRANSVENOUS OBLITERATION FOR THE TREATMENT OF GASTRIC VARICEAL HEMORRHAGE**
Kok Wei Hao¹, Lailatulema¹, Lee Chong Chearn¹, Khairul Najmi Muhammad Nawawi^{1,2}, Zhiqin Wong^{1,2}, Raja Affendi Raja Ali^{1,2}, Yazmin Yaacob³, Nik Farhan³
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- ID 120 KASABACH-MERRIT SYNDROME AND ADULT HEPATIC EPITHELIOID HEMANGIOENDOTHELIOMA: AN UNUSUAL ASSOCIATION**
Kok Wei Hao¹, Kausalyaa Krishnabalan¹, Lee Chong Chearn¹, Ng Inn Shan¹, Khairul Najmi Muhammad Nawawi^{1,2}, Zhiqin Wong^{1,2}, Raja Affendi Raja Ali^{1,2}, Yazmin Yaacob³
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- ID 121 PATIENTS' PERSPECTIVES ON BOWEL RESECTION FOR INFLAMMATORY BOWEL DISEASE: A PILOT QUALITATIVE STUDY**
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ID 141 FREQUENCY OF SIGNIFICANT STEATOSIS IN VARIOUS CHRONIC LIVER DISEASES: AN EVALUATION WITH TRANSIENT ELASTOGRAPHY

Shahreedhan Shahrani¹, Preetica Mayuri Balakrishnan², Koshni Ravi², Sandeep Singh Gill R S², Chee Sher Wye², Saiful Hasyim Zulkeflie², Ng Ying Zhuang³, Lee Wai Kin⁴, Mohamed Amin A K⁵, Sooi Choong Yeong⁶, C Vikneshwaran C K¹, Nik Arsyad N M A⁷, Ruben Skantha¹, Mohd Fairul Limun¹, Nik Razima Wan Ibrahim⁸, Abdul Malik Mohamed Talha⁹, Chuah Kee Huat², Khoo Stanley¹, Ruveena Bhavani¹, Chan Wah Kheong², Sanjiv Mahadeva²

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DEVELOPMENT AND VALIDATION OF THE ADULT CIRRHOSIS KNOWLEDGE QUESTIONNAIRE (ASK-Q)

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BACKGROUND: Assessing a patient's liver cirrhosis knowledge is important in improving patient outcomes. To date, no questionnaire has been developed to assess patients' knowledge regarding multiple aspects of liver cirrhosis. This study aimed to develop and validate the Adult cirrhosis Knowledge Questionnaire (ASK-Q).

METHODS: The ASK-Q was developed based on literature review and input from an expert panel. Five English-speaking cirrhotic patients who participated in a pilot study commented that the font size was too small. Hence, the font was enlarged and the final version of the ASK-Q [which consists of 24 items with 4 domains: definition (5 items), aetiology (5 items), complications (5 items), and management (9 items) of liver cirrhosis] was then administered to English-speaking cirrhotic patients, aged ≥ 18 years, with or without decompensation at a tertiary centre, from September 2020 to November 2021, at baseline and a fortnight later. Patients with hepatic encephalopathy were excluded.

RESULTS: A total of 120/135 patients agreed to participate (response rate = 88.9%). The overall median score was 54.2[37.5-62.5]. A total of 7/24 (29.1%) items were "easy", 15/24 (62.5%) items were "moderately easy" and 2/24 (8.3%) items were "difficult". The ASK-Q was able to discriminate the knowledge level of patients with and without tertiary education (57.5 [45.8-69.8] vs 47.8 [33.3-59.3], $p < 0.05$). The overall Kuder-Richardson (KR) coefficient was 0.698 indicating adequate internal consistency. At retest, 77/120 patients participated (response rate = 64.2%) and 16/24 items were not statistically significant, indicating adequate reliability.

CONCLUSIONS: The ASK-Q was found to be a valid and reliable questionnaire for evaluating the knowledge of liver cirrhosis amongst English-speaking adult patients.

Keywords: Cirrhosis, knowledge, questionnaire, validation study

CLINICAL OUTCOME OF FUNCTIONAL GASTROINTESTINAL DISORDERS IN SECONDARY CARE: A LONGITUDINAL STUDY

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BACKGROUND: Real-world data on the outcome of routine treatment for functional gastrointestinal disorders (FGID) in secondary care are lacking.

METHOD: A longitudinal study of consecutive adult patients with various FGIDs attending this institution's gastroenterology clinic was conducted. Following 2 years of treatment, the proportion of FGID patients with symptom improvement, details of clinical therapy, factors associated with and the impact of 'no symptom improvement' were determined.

RESULTS: A total of 289 patients (median age 68 years; 64.7% females; 28.4% irritable bowel syndrome (IBS), 20.1% functional dyspepsia (FD), 8.7% functional constipation (FC), 42.9% overlap syndrome) were recruited between January to June 2019. After 2 years, 191 (66.1%) FGID patients reported symptom improvement. Patients with overlap syndrome were less likely to have symptomatic improvement compared to those with a single FGID (Overlap 55.6% vs IBS 74.4% vs FD 72.4% vs FC 76.0%, $p=0.014$). Reassurance was associated with symptom improvement ($p<0.001$). On multivariate analysis, overlap syndrome remained significantly associated with a poorer outcome (OR 2.27, 95% CI 1.22 - 4.25, $p=0.010$), while providing reassurance was associated with a positive outcome (OR 0.30, 95% CI 0.16 - 0.56, $p<0.001$). Proton pump inhibitors (55.7%) was the most commonly prescribed medication. Only 16.4% and 14.9% of patients were referred for a low FODMAP diet and psychiatric intervention respectively. FGID patients who had 'no improvement' were more likely to seek further GI consultations and had more work absenteeism.

CONCLUSION: Approximately two-thirds of FGID patients in secondary care showed symptom improvement. Patients who were reassured had better symptom improvement, while those with an overlap syndrome were associated with improvement poorer outcome, resulting in greater healthcare consultation and work absenteeism.

Keywords: functional gastrointestinal disorders, overlap syndrome, symptom outcome, healthcare utilization, anxiety, reassurance

CYTOMEGALOVIRUS (CMV) COLITIS IN END-STAGE RENAL DISEASE (ESRD) PATIENT WITH RECENT SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2 (SARS-CoV2) INFECTION

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We present a rare case of CMV colitis infection in a recent SARS-CoV2 infected ESRD patient. He presented atypically with very short history of sudden onset of per-rectal bleed 2 weeks after SARS-CoV2 infection category 3. His colonoscopy revealed multiple ulcers present with an oedematous and ulcerated ileocecal valve which was biopsied and clipped. Ileocecal ulcer biopsy revealed granulomas and positive immunohistochemical staining for CMV. He was successfully treated with intravenous ganciclovir for 3 weeks and recovered well.

Keywords: SARS-CoV2, COVID-19, Cytomegalovirus Colitis, End-stage renal disease, Ganciclovir.

DISCUSSION: End-stage renal disease patients may have a higher risk of encountering CMV because of frequent blood transfusion and contaminated dialysis equipment when receiving hemodialysis.¹ Despite reports of high seroprevalence of CMV infection in CKD patients (66-84%), CMV disease in this population has rarely been reported.² According to recent research, SARS-CoV-2 infection may largely disrupt T lymphocytes, specifically CD4+ and CD8+ T cells, which may be heavily involved in the pathological process of COVID-19.³ However, there are only a few reported cases in the literature talking about cytomegalovirus colitis co-infection in COVID-19 patients.

CONCLUSION: This case report highlights that patient can present atypically with one day history of per-rectal bleed and clinician should have high index of suspicion with the diagnosis of CMV colitis as a possible diagnosis of lower gastrointestinal symptoms in ESRD patient and recent SARS-CoV2 infection so that prompt investigation and treatment can be initiated.

CASE OF EOSINOPHILIC COLITIS AFTER BNT162b2 mRNA COVID-19 VACCINATION

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INTRODUCTION: The BNT162b2 mRNA Covid-19 vaccine is widely used where 8.2% participant above 56 years old reported diarrhea as an adverse event. This case report highlights the possibility of eosinophilic colitis (EC) in post-vaccination diarrhea.

CASE REPORT: A 72-year-old gentleman presented with generalized colicky abdominal pain and acute diarrhea after receiving the first dose of BNT162b2 vaccine. Peripheral blood eosinophilia with cecal and ascending colon mucosal eosinophilia 100-130 cells/HPF and eosinophilic cryptitis were demonstrated. Symptoms and eosinophilia resolved spontaneously and did not recur after second dose vaccination.

DISCUSSION: Diarrhea as a post-vaccination adverse event was not reported in the initial clinical trial. There were also no reports on eosinophilia or EC post-vaccination. However, diarrhea was reported as an adverse event in 8.2% of patients receiving the BNT162b2 vaccine outside of clinical trials.

CONCLUSION: We are reporting a case of EC, with post-BNT162b2 vaccination as a putative cause. The symptoms were self-limiting and no specific treatment was required. Patient did not develop recurrence or worsening of symptoms after the second dose of vaccination. This novel vaccine utilizes a mechanism of action not previously seen in other vaccines and as such more data and research is needed to confirm EC as a possible adverse reaction. Clinicians should be vigilant about the possibility of EC in the event of post-vaccination diarrhea and report it accordingly.

EFFICACY OF INTRAVENOUS USTEKINUMAB INDUCTION AND SHORTENED DURATION OF ADMINISTRATION AS SALVAGE THERAPY FOR CROHNS DISEASE

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Introduction: Ustekinumab has been shown to be an effective treatment for the maintenance and remission in patients with moderate to severe Crohn's disease. However currently no available guidelines regarding escalation of therapy.

CASE REPORT: We report a case of ileocolonic crohns disease with a complex perianal fistula which lost response to ustekinumab about 1 year and 4 months post starting treatment. He developed increasing bouts of bloody diarrhea and elevated inflammatory markers. A repeat endoscopy was done which showed chronic active colitis consistent with severe disease. A decision was made for reinduction with ustekinumab and also to shorten the duration of administration to 4 weekly in contrary to the recommended 8 weekly. This lead to marked improvement in his overall clinical presentation, biochemical markers.

DISCUSSION: Despite no guidelines being available, multiple case report have been published which showed reinduction and shortening interval of ustekinumab may benefit patients who lose response to standard dosing and this has been proven in our case.

CONCLUSIONS: Reinduction and shortened interval of ustekinumab can be effective in patients with Crohns disease with partial or loss of response to maintenance therapy.

EFFECT OF COVID 19 PANDEMIC ON TREATMENT OUTCOME OF HEPATITIS C PATIENTS ON DAA - A SINGLE CENTRE EXPERIENCE

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INTRODUCTION: Chronic hepatitis C virus (HCV) infection can lead to liver cirrhosis and its complications. Viral eradication reduces liver related morbidity and mortality. Direct acting antiviral (DAA) is well tolerated and highly efficacious in curing HCV infection.

OBJECTIVES: Analysis of the impact of COVID 19 pandemic on DAA treatment in our centre.

METHODS: Data collection from DAA registry in Serdang Hospital from 2020 to 2021.

RESULTS:

54 patients with chronic hepatitis C were treated with DAA (Sofosbuvir 400mg and Daclatasvir 60mg with or without Ribavirin) in 2020 (N=30) and 2021 (N=24).

79.6% (N=43) of patients were males and 20.4% (N=11) were females.

79.6% (N=43) of patients < 60 years old, 20.4% (N=11) > =60 years old.

Most common risk factor is ex-intravenous drug user (53.7%,N=29).

Most common HCV genotyping is type 3 (44.4%, N=24).

48% (N=26) of patients has cirrhotic liver, 52% (N=28) were non cirrhotic.

66.7% (N=36) of patients had completed treatment, 27.8% (N=15) defaulted treatment and follow up, 5.6% (N=3) of patients passed away while on going treatment however it was not liver related mortality.

Among the patients who had completed treatment, 80.6% (N=29 out of 36) of patients' SVR 12 were checked and SVR 12 rate achieved 100%. 19.4% (N=7 out of 36) of patients defaulted blood test for SVR 12.

DISCUSSION: Despite DAA combination of Sofosbuvir and Daclatasvir is no longer listed in EASL recommendations treatment on hepatitis C, it still shows good treatment response in this study.

COVID 19 pandemic had resulted high default rate of DAA treatment.

CONCLUSION: DAA is highly effective in curing hepatitis C. However COVID 19 pandemic had a huge impact on patient's follow up due to movement control order by government and also patients were generally reluctant to visit hospital during pandemic, hence default rate is high. Telemedicine might be an effective option overcoming this problem.

LIVER DYSFUNCTION IN ADULT COVID-19 INFECTION - A COMPARISON BETWEEN DELTA VARIANT AND PREDECESSOR STRAINS

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INTRODUCTION: Various factors have been reported to be responsible for SARS-CoV 2 associated liver dysfunction, but the impact of Variant of Concern (VoC) on liver function is less certain.

OBJECTIVE: To determine the (i) prevalence and risk factors to develop abnormal liver biochemistry (ALB) and liver injury (LI) and (ii) differences in ALB and LI between the Delta variant compared to wild-type and VoC before Delta variant COVID-19 infection amongst adults with COVID-19 infection in Malaysia.

RESULTS: Of 1246 patients with COVID-19 infection, 58.7% and 26.6% developed ALB and LI, respectively. Multivariate analysis showed men, those with moderate and severe disease, underlying Chronic Liver Disease (CLD) are more likely to develop ALB and LI. Patients with Delta variant infection have significantly higher risk to develop both ALB (71.6% vs 48.5%, $p < 0.001$) and LI (38.8% vs 17.1%, $p < 0.001$) compared to previous strains.

DISCUSSION: Liver dysfunction is commonly due to cytopathic effect of the virus and undiagnosed CLD. Additionally, drug-induced liver injury caused by disease modulating pharmacotherapy, cytokine storm and liver congestion due to ventilation is observed in severe disease. Delta variant has higher affinity to hepatocytes and cholangiocytes with enhanced cell entry which results in higher incidence of hepatitis and cholestasis. Also, Delta variant to have enhanced lung and colon cell entry, resulting in higher burden of portal vein viraemia, further increasing the risk of damage to hepatocytes and cholangiocytes.

CONCLUSION: ALB among COVID-19 patients is common but LI is less common and more likely to occur in men, those with moderate and severe COVID-19 infection, and with underlying CLD. Delta variant COVID-19 patients are more likely to suffer from ALB and LI than predecessor strains.

Keywords: COVID-19 infection; Abnormal liver biochemistry; liver injury; Delta variant; Variant of Concern

DIAGNOSTIC PERFORMANCE OF TWO NON-INVASIVE BIOMARKERS USED INDIVIDUALLY AND IN SEQUENTIAL COMBINATION FOR CIRRHOSIS ASSOCIATED WITH HEPATITIS C

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INTRODUCTION: It is often challenging to confirm the cirrhosis status of people living with hepatitis C in resource-limited primary healthcare (PHC) settings. This study evaluated the performance of the Aspartate Aminotransferase-to-Platelet Ratio Index (APRI) and the Fibrosis-4 (FIB-4) Index when they were used individually and in sequential combination to diagnose cirrhosis associated with hepatitis C.

METHODS: This was a cross-sectional study using the data originally collected from participants in the Hepatitis C Elimination through Access to Diagnostics (HEAD-Start) study in Malaysia. The biochemical test results of all the individuals with a confirmed diagnosis of hepatitis C were used to compute their APRI and FIB-4 scores. The diagnostic performance of individual biomarkers was first assessed, with cut-off scores set at 1.5 and 2.0 for the APRI and 3.25 for the FIB-4 index. For the sequential combination method, the cirrhosis status of those found to have an APRI score between 1.0 and 1.5 were reassessed based on their FIB-4 scores. Transient elastography (TE) was used as a reference standard for cirrhosis diagnosis. The aspects of diagnostic performance evaluated were sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV).

RESULTS: This evaluation involved 1,033 individuals. They were mainly male (93.9%) and had a mean age of 46.1 years. Slightly more than one-third of them had liver cirrhosis. The APRI with a cut-off score of 1.5 produced a sensitivity of 43.9%, a specificity of 96.7%, a PPV of 88.3% and an NPV of 76.2%. Despite a better specificity, the APRI with a cut-off score of 2.0 showed a much lower sensitivity (28.5%) and NPV (71.8%). The FIB-4 with a cut-off score of 3.25 yielded a sensitivity of 39.5%, a specificity of 96.7%, a PPV of 87.2% and an NPV of 74.8%. The sequential combination method demonstrated the best diagnostic performance, recording a sensitivity of 48.9%, a specificity of 95.8%, a PPV of 86.3% and an NPV of 77.7%. The cirrhosis status suggested by this method also matched the findings of TE in approximately 80% of the individuals evaluated.

CONCLUSION: The APRI and FIB-4 Index performed better in cirrhosis diagnosis among people living with hepatitis C when they were used in sequential combination than when used individually.

Keywords: APRI score, biomarker, cirrhosis, FIB-4, hepatitis C

CASE REPORT: I THOUGHT IT WAS CROHNS, BUT...

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INTRODUCTION:

- Tuberculosis is an age old disease that affects any part of the body, lung being the commonest. The colon is the 6th most common site of extrapulmonary tuberculosis (TB) involvement.
- Due to its diverse and nonspecific symptoms, accurate diagnosis remains a challenge, as it may mimic numerous other infections, inflammatory disorders or even malignancy.

CASE REPORT:

- We present a case of chronic diarrhea with constitutional symptoms. Endoscopically it resembled Crohns disease however, the histopathological examination was suggestive of TB. Rather unfortunate our patient developed disseminated TB thereafter.

CONCLUSION:

- In about 15-25% of cases, TB colitis may present simultaneously with pulmonary TB.
- The endoscopic findings of skip lesions and longitudinal ulcers are classical of Crohns disease however TB can mimic Crohns disease

PNEUMATOSIS CYSTOIDES INTESTINALIS(PCI): A CASE REPORT

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BACKGROUND: Pneumatosis cytoides intestinalis is an uncommon condition characterised by the presence of gas-filled cysts in the gastrointestinal tract. The rupture of the cysts causes benign pneumoperitoneum in the absence of peritoneal irritation.

CASE PRESENTATION: We report a case of a fifty-eight years old lady with a background history of mixed connective tissue disorder (Polymyositis, Scleroderma, Sjogren syndrome) since 2018. Her latest flare of disease was in April 2021, with worsening myositis requiring addition of mycophenolate mofetil and tapering prednisolone. She presented in May 2022 with intermittent diarrhoea for 1 year, worsening for the past 1 month. Physical examination and blood test was unremarkable. Colonoscopy revealed normal study. Further workup with CECT abdomen a month later noted pneumoperitoneum and dilated, thickened small bowels with intramural gas and portal venous gas. Otherwise she was clinically well with no signs of peritonitis. Diagnostic laparoscopy was initially planned for her with the impression of small bowel perforation. However, after multidisciplinary team discussion, a diagnosis of pneumatosis cystoides intestinalis was made. She was managed conservatively with bowel rest, intravenous fluid, oxygen supplementation and prophylactic antibiotics. She was closely monitored inpatient, and showed no signs of peritonitis throughout her hospital stay. CECT abdomen repeated 72 hours later showed resolution of small bowel intramural gas with no significant small and large bowels dilatation. Subsequently she was able to tolerate orally and was discharged after 6 days of admission.

DISCUSSION: Pneumatosis cytoides intestinalis is rare and often overlooked. Numerous theories have been proposed to explain the pathogenesis of PCI, including mechanical, bacterial and biochemical causes. Asymptomatic PCI is managed conservatively with antibiotics, oxygen and elemental diet while in the presence of acute abdomen, surgical exploration is warranted.

CONCLUSION: PCI is often confused with common surgical emergencies. Hence careful assessment and multidisciplinary approach is crucial for correct diagnosis and management.

SERONEGATIVE AUTOIMMUNE HEPATITIS

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OBJECTIVE: Autoimmune hepatitis is a rare liver disease characterized by hypergammaglobulinemia associate with circulating antibodies, human leucocyte antigens and characteristic liver histology. Early diagnosis is essential as it is highly responsive to immunosuppressive therapy and could prevent further liver damage and complications.

METHODOLOGY: A 48-year lady with known Grave's thyroiditis (post radioiodine therapy) and hypertension was initially presented to local hospital after noted significant transaminitis from regular blood check. No significant aetiology could be identified from history. Screening for hepatitis (A, B, C) was non-reactive along with normal autoimmune hepatitis (AIH) marker. Subsequent hepatobiliary ultrasonography was also unremarkable. However, initial revised autoimmune hepatitis scoring was 12 (probably AIH).

She was empirically treated with prednisolone and subsequent liver enzyme had shown marked resolution of transaminitis. However, follow up liver biopsy performed did not show features of AIH. Steroid was tapered off in view of negative serology markers and biopsy findings, with considerations of alternate diagnosis.

A week post tapered off steroid, she again presented with unwell, nausea, vomiting and jaundice. Serology marker included specific panel liver antibodies and liver biopsy was repeated before recommencement of steroid.

RESULTS: Transaminitis was notably improved with treatment.

Consecutive liver enzyme was normalized with standard immunosuppression on follow up clinic visits. Review of second serology markers remain negative. However, second liver biopsy sampling has shown features of AIH.

DISCUSSION: Revised AIH scoring system and patient's responsiveness to steroid therapy were supportive in diagnosing AIH despite negative serology. Though, adequate liver biopsy sampling is essential and remains as gold standard in making final diagnosis.

CONCLUSION: Diagnosis of AIH could be challenging due to its heterogenicity in presentation. Seronegative AIH is a rare entity in which an adequate liver biopsy sampling, AIH scoring system and responsiveness to immunosuppressive therapy are the key considerations in making a diagnosis.

ARSENIC TOXICITY - AN UNCOMMON CAUSE OF LIVER INJURY: A CASE REPORT

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INTRODUCTION: Drug and herbal-induced liver injury are common and symptomatically can mimic both acute and chronic liver diseases. A systemic approach with detailed history is essential to identify the cause of liver injury.

CASE REPORT: Seventy-five year old gentleman, with underlying ischaemic heart disease, presented with generalised weakness, lethargy and jaundice for the past one month. Physical examination found scleral icterus, ascites and bilateral pedal oedema. Biochemical tests showed cholestatic hyperbilirubinemia with transaminitis and also severe acute kidney injury (AKI). Hepatitis B and C screenings were negative and MR cholangiopancreatography (MRCP) showed no evidence of biliary obstruction. Autoimmune hepatitis screening done later also turned out to be negative. In view of persistent jaundice, liver biopsy was performed and histopathology showed acute cholestatic hepatitis, with possibility of drug idiosyncrasy. Renal biopsy revealed moderate interstitial nephritis.

Further history revealed that he had been taking herbal supplements for the past one year. Hence heavy metal screening was done which showed toxic levels of serum arsenic. Chelating agent was not given as blood film showed no evidence of acute arsenic poisoning. He was started on prednisolone for interstitial nephritis and required intermittent haemodialysis for anuric AKI. However, he developed nosocomial infection and despite all supportive measures, he succumbed after two weeks.

DISCUSSION: Heavy metal contamination in herbal medicines is a growing concern. Long-term chronic exposure to arsenic can cause different degrees of liver injury. The underlying mechanism of arsenic-induced liver injury remains unclear, and no specific treatment exists because of the complexity of arsenic. Chelation treatment may be useful in acute arsenic poisoning, while less efficacy in chronic intoxication.

CONCLUSION: Acute liver injury is a common clinical encounter in hospitals. Apart from common causes of liver injury, heavy metal poisoning such as arsenic should be considered. Although uncommon, it is serious and requires specific chelation treatment.

VALIDATION OF THE HEPAMET FIBROSIS SCORE IN A MULTI-ETHNIC ASIAN POPULATION

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OBJECTIVE: To validate the performance of the Hepamet fibrosis score(HFS) when used alone and when used in a two-step approach with liver stiffness measurement for the diagnosis of advanced liver fibrosis, in comparison with the use of the NAFLD fibrosis score and the Fibrosis-4 score, in our cohort of biopsy-proven NAFLD patients.

METHOD: This is a cross-sectional study on 196 NAFLD patients who had a liver biopsy and LSM on the same day.

RESULTS: The AUROC of HFS for the diagnosis of advanced liver fibrosis was 0.85 (95% CI, 0.80 - 0.91). The sensitivity, specificity, positive predictive value, negative predictive value, proportion of indeterminate results and misclassification rate was 81.8%, 91.8%, 47.4%, 98.2%, 32.1% and 6.1%, respectively. Using LSM <10 kPa and ≥ 15 kPa for the diagnosis of absence and presence of advanced liver fibrosis, respectively, in patients with HFS ≥ 0.47 (i.e., the two-step approach) reduced indeterminate results and misclassification to 16.1% and 3.6%, respectively.

DISCUSSION: We found HFS to have good accuracy for the diagnosis of advanced liver fibrosis. However, the HFS was not found to be superior to the Fibrosis-4 score and the NAFLD fibrosis score in our study. The high negative predictive value of the lower cut-off of fibrosis scores is an important screening tool since there is a high prevalence of NAFLD in the general population but only a small proportion of patients with advanced liver fibrosis. The Hepamet fibrosis score in the two-step approach was associated with the lowest misclassification rate at 3.6%.

CONCLUSIONS: Our study provides further external validation of the good diagnostic performance of the HFS in a population that was largely unrepresented in earlier work. We demonstrated its high negative predictive value and utility in a two-step approach with LSM for the diagnosis of advanced liver fibrosis.

TERLIPRESSIN INDUCED RHABDOMYOLYSIS AND SKIN NECROSIS

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A 58-year-old man with Hepatitis C liver cirrhosis who presented as an outpatient endoscopy variceal surveillance, however the event banding was eventful, as the varices ruptured during the procedure and he was subsequently admitted. He was started on antibiotics and terlipressin to prevent rebleeding. After 3 days of treatment, he developed multiple vasculitic patches over the abdomen, bilateral upper and lower limbs that eventually became necrotic along with generalized myalgia. In addition to this he also developed acute kidney injury, his urine output reduced with a raised creatinine kinase of 25,000U/L. The terlipressin was stopped and appropriate hydration was started. His skin condition gradually improved over 3 weeks and CK levels normalized, along with improving renal function.

Terlipressin is known to cause macrovascular complications such as angina and digital ischemia due to its vasopressor nature, however it can also cause microvascular ischemia in other organs that are usually not affected by vascular ischemia such as the skin and muscle.

In conclusion, we aim to highlight that terlipressin can potentially cause microvascular injury and that early recognition and correct diagnosis with withdrawal of terlipressin can help reduce further drug induced injury.

CASE REPORT: AMOEBIC COLITIS- THE MIMICKER OF INFLAMMATORY BOWEL DISEASE

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INTRODUCTION: Amoebic colitis, a disease caused by *Entamoeba histolytica*, is one the most frequent clinical manifestation of intestinal infection and a common cause of diarrhea worldwide. We report a case of amoebic colitis in a previously fit 23 years old young man who had been given the incorrect diagnosis of inflammatory bowel disease.

CASE PRESENTATION: He was presented to emergency department with chronic bloody diarrhea for the past 5 months associated with anemic symptoms and significant weight loss. On further history, he worked as a soldier and has been on and off lived in the jungle. On examination, he has pale conjunctiva and per-rectal exam done showed fresh blood stained. Labs were significant for hemoglobin of 7.1g/dl. Stool cultures were taken showed negative findings. We proceeded with colonoscopy and findings were multiple proctocolonic superficial aphthous ulcers with no active bleeding. In view of the scope findings, we started mesalazine and steroid for him. 2 weeks later, HPE revealed chronic active colitis with numerous amoebic trophozoites seen. Hence, we stopped the steroid and mesalazine and given 14days of metronidazole for him. Subsequently his symptoms improved and we arranged follow up for the patient in Hospital Sri Aman, Sarawak in view of his logistic issue.

DISCUSSION: Amoebiasis, the second leading parasitic cause of death in the world, can be difficult to diagnose as the gastrointestinal symptoms onset are usually insidious. It is important to have a high clinical suspicion, specifically if patients visit in rural areas and return with gastrointestinal symptoms. In this case, our patient experienced symptoms for several months but remained undiagnosed. The significant anemia, which was likely from the bleeding ulcerations, led to a colonoscopy and the diagnosis of amoebic colitis.

Keywords: amoebic colitis, *Entamoeba histolytica*

PREVALENCE OF BARRETT'S ESOPHAGUS (BE) AND ITS PROFILE IN MULTIETHNICITY MALAYSIAN POPULATION

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INTRODUCTION: There is a paucity of reliable data on the prevalence of Barrett's esophagus (BE) in the various races in Malaysia. The prevalence of BE in Malaysian population was studied, as well as the relationship of various factors associated with BE. Correlation between endoscopic diagnosis of BE and histology confirmatory report and incidence of esophageal neoplasm during endoscopic screening of BE was also analysed.

METHODS: We conducted a retrospective analysis on patients that underwent elective OGDS with multiple indications between 1st January 2020 and 28th February 2022 (26 months) at Hospital Kuala Lumpur. BE was diagnosed by direct visualisation by endoscopists. OGDS findings and histology reports were obtained from Malaysia Gastrointestinal Registry (MGIR) database and electronic medical record respectively.

RESULTS: Out of 7957 OGDS performed within the studied period, 179 was diagnosed to have BE. The prevalence of BE was estimated at 2.3% (95% CI: 1.9% - 2.6%). There was a preponderance of age of more than 50 years ($p < 0.001$), males ($p = 0.001$) and those with the presence of a hiatus hernia ($p = 0.001$) and esophagitis ($p < 0.001$). Other endoscopic findings in BE include peptic ulcer (1.7%), esophageal varices (2.2%) and esophageal tumour (1.1%). Histology report was available in 143 cases. Of these, approximately 50% ($n = 71$) had both endoscopic BE diagnosis and histological confirmation. Low grade and high grade dysplasia were described in 7% and 1.4% respectively while metaplasia changes were described in 15.4% of cases. 4 patients had histological confirmation of neoplasm in which 3 had adenocarcinoma and 1 had neuroendocrine tumour.

CONCLUSION: Within BE cohorts, pooled prevalence of low-grade dysplasia, high-grade dysplasia and esophageal adenocarcinoma was 7 %, 1.4 % and 2.8 %, respectively. This study showed that prevalence rates of BE and adenocarcinoma remain low and consistent with data from most Asian countries.

1. Associations between BE and possible risk factors

Possible risk factors	n (%)			p value
	Overall (n=7,957)	BE (n=179)	Non-BE (n=7,778)	
Age				
>50 years	5,737 (72.1)	162 (90.5)	5,575 (71.7)	<0.001 ^a
≤50 years	2,220 (27.9)	17 (9.5)	2,203 (28.3)	
Gender				
Male	4,617 (58.0)	126 (70.4)	4,491 (57.7)	0.001 ^a
Female	3,340 (42.0)	53 (29.6)	3,287 (42.3)	
Gastroesophageal reflux disease	1,438 (18.1)	42 (23.5)	1,396 (17.9)	0.058 ^a
Presence of hiatal hernia	1,975 (24.8)	73 (40.8)	1,902 (24.5)	0.001 ^a

^a Pearson's chi-square test.

2. Endoscopic findings for BE (n=179)

Findings	n (%)
Esophagitis	43 (24.0)
Reflux	42 (23.5)
Others	1 (0.6)
Peptic ulcer	3 (1.7)
Esophageal varices	4 (2.2)
Esophageal stricture	1 (0.6)
Esophageal tumor	2 (1.1)

3. Histological findings

Histological impression	Number	Percentage
Barrets Esophagus (BE)	71	49.7
Low grade dysplasia (LGD)	10	7.0
High grade dysplasia (HGD)	2	1.4
No metaplasia	2	1.4
Negative for BE/LGD/HGD	39	27.3
Metaplasia changes	22	15.4
Neoplasma changes	4	2.8
Esophagitis/ inflammation changes	24	16.8
No biopsy obtained / missing report	36	20.1

PREVALENCE OF HIATAL HERNIA (HH) IN MALAYSIA: ASSOCIATION WITH AGE AND OTHER ESOPHAGEAL ABNORMALITIES?

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INTRODUCTION: Hiatal hernia (HH) is a relatively common finding in the general population. It is a common belief that the risk of hiatal hernia increases with age. The majority of people with hiatal hernias are asymptomatic, however, hiatal hernia can cause heartburn, dyspepsia, dysphagia, and regurgitation. The aim of our study is to determine the prevalence of hiatal hernia in all adult patients who had an esophagogastroduodenoscopy (OGDS) and to stratify the prevalence according to age group. The association of other esophageal abnormalities were also evaluated.

METHODS: We conducted a retrospective analysis on patients that underwent elective OGDS with multiple indications between 1-1-2017 and 31-12-2021 at Hospital Kuala Lumpur. HH was diagnosed by direct visualisation by endoscopists. OGDS findings were obtained from Malaysia Gastrointestinal Registry (MGIR) database. The prevalence of HH was calculated, association between HH with possible risk factors were performed using statistical analysis. Association with varying age groups was done by multiple logistic regression model.

RESULTS: The prevalence of HH in Malaysia was estimated at 21.3% (95% CI: 20.8% - 21.9%). HH prevalence was greater in female than male (adjusted OR 1.18 (95% CI 1.10-1.27)). Interestingly, HH prevalence was significantly more in adults of less than 35 years (adjusted OR 1.57 (95% CI 1.04-2.37)) and those of more than 75 years (adjusted OR 1.77 (95% CI 1.18-2.66)). HH prevalence was significant in adults who underwent OGDS for dyspepsia and GERD-like symptoms as their indications ($p < 0.001$). Presence of reflux esophagitis and esophageal neoplasm was significantly higher in patients with HH with $p < 0.001$ and $p = 0.019$ respectively.

CONCLUSION: This study did not show increase prevalence of HH with increasing age group. Further analysis is required with adjustment of BMI to varying age group. HH is strongly associated with development of reflux esophagitis and esophageal neoplasm.

1. Prevalence of Hiatal Hernia (HH)

Total cases of OGDS = 19,849

Total cases of BE = 4,234

Prevalence = **21.3% (95% CI: 20.8% - 21.9%)**

2. Associations between HH and possible risk factors

Possible risk factors	n (%)			p value
	Overall (n=19,849)	HH (n=4,234)	Non-HH (n=15,615)	
Age, years	57.1 (15.8)	57.4 (16.4)	57.1 (15.7)	0.184 ^a
Age categories				0.184 ^b
<18 years	195 (1.0)	30 (0.7)	165 (1.1)	
18-34 years	1,869 (9.4)	467 (11.0)	1402 (9.0)	
35-54 years	5,282 (26.6)	1038 (24.5)	4244 (27.2)	
55-74 years	10,182 (51.3)	2126 (50.2)	8056 (51.6)	
≥75 years	2,321 (11.7)	573 (13.5)	1748 (11.2)	
Gender				0.001 ^c
Male	11,178 (56.3)	2,244 (53.0)	8,934 (57.2)	
Female	8,671 (43.7)	1,990 (47.0)	6,681 (42.8)	
Indication of OGDS				
Dyspepsia	5,116 (25.8)	1,221 (28.8)	3,895 (24.9)	<0.001 ^c
GERD-like symptoms	1,512 (7.6)	536 (12.7)	976 (6.3)	<0.001 ^c
Persistent vomiting	91 (0.5)	15 (0.4)	76 (0.5)	0.258 ^c
Dysphagia/ odynophagia	675 (3.4)	169 (4.0)	506 (3.2)	0.017 ^c
Presence of esophagitis	3,611 (18.2)	1,479 (34.9)	2,132 (13.7)	<0.001 ^c
Types of esophagitis				
Reflux	3,529 (17.8)	1,468 (34.7)	2,061 (13.2)	<0.001 ^c
Candidiasis	51 (0.3)	9 (0.2)	42 (0.3)	0.520 ^c
Ryle's tube-related	11 (0.1)	3 (0.1)	8 (0.1)	0.711 ^d
Presence of esophageal stricture	187 (0.9)	12 (0.3)	175 (1.1)	<0.001 ^c
Presence of esophageal tumor	143 (0.7)	14 (0.3)	129 (0.8)	0.001 ^c

GERD, gastrointestinal reflux disease; OGDS, oesophagus duodenoscopy procedure.

^a Independent t-test.

^b Linear-by-linear association test.

^c Pearson's chi-square test.

^d Fisher's exact test.

3. Backward stepwise multiple logistic regression:

Factors	Adjusted OR (95% CI)	p value
Age		
<18 years	1.00 (ref)	-
18-34 years	1.57 (1.04-2.37)	0.031
35-54 years	1.20 (0.80-1.80)	0.372
55-74 years	1.38 (0.92-2.05)	0.119
≥75 years	1.77 (1.18-2.66)	0.006
Gender		
Male	1.00 (ref)	-
Female	1.18 (1.10-1.27)	<0.001
OGDS Indication – dyspepsia		
No	1.00 (ref)	-
Yes	1.13 (1.05-1.23)	0.002
OGDS Indication – GERD-like symptoms		
No	1.00 (ref)	-
Yes	1.64 (1.46-1.84)	<0.001
OGDS Indication – dysphagia/ odynophagia		
No	1.00 (ref)	-
Yes	1.37 (1.14-1.66)	0.001
Presence of esophagitis (reflux type)		
No	1.00 (ref)	-
Yes	3.25 (3.00-3.52)	<0.001
Presence of esophageal stricture		
No	3.25 (3.00-3.52)	<0.001
Yes	1.00 (ref)	-
Presence of tumor		
No	1.00 (ref)	0.019
Yes	1.95 (1.12-3.42)	-

GERD, gastrointestinal reflux disease; OGDS, oesophagus duodenoscopy procedure.

BARRIERS TO THE DONATION OF LIVING DONATION LIVER TRANSPLANTATION (LDLT): HOSPITAL KUALA LUMPUR'S (HKL) EXPERIENCE

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INTRODUCTION: In HKL, evaluation donor for LDLT program has just started in end of year 2019 and first LDLT was performed in December 2020. Living donor evaluation utilizes considerable resources and the non-maturation of potential into actual donors may sometimes prove fatal in patients who in needs of liver transplant. Barriers to living liver donation have been rarely investigated despite a growing interest in the utilization of living donor transplantation and the satisfaction of donor safety. Here, we retrospectively analyzed 48 potential donors for 42 potential recipients who was referred to our unit for evaluation of liver donation between October 2019 till February 2022 to study the causes of donation discontinuation.

Among 48 potential donors, 31 (64.5%) failed or did not complete assessment for liver donation. 46 donors were referred from Women Children Hospital for LDLT donor evaluation. The number of potential donors were equal for both male and female (M=24,F=24). 44 of them were parents to recipient. Mean age was 46.4 ± 5.414 , the eldest and youngest potential donor age was 57 and 23 years old respectively. Only 17 out of 48 (35.4) had some knowledge on living donor liver transplant and came forward voluntarily to be a donor. Average monthly household income was RM 3900.00. Mean BMI was 26.5 ± 15.27 in which 18 donors classified as overweight donor (BMI 25-29.9), 5 and 2 had BMI of grade 1 (BMI 30-34.9) and grade 2 (BMI 35-39.9) obesity respectively. 14(58.3 %) out of 24 male donors were found active smoker during initial evaluation. 3 potential donors were not willing to stop smoking and contributed to non-maturation donor evaluation. Donor-related factors (78.9%) were the most common causes of donation discontinuation, followed and recipient-related factors (15.8%). 10 out of 31 (32.3) donors were disqualified due to significant comorbidities. Interestingly, withdrawal of donation consent (5 (16.1%)) and logistic reason including social issues (6(19.4%) were the among commonest causes, suggesting the importance of non-biomedical aspect. Reasons for other non-maturation included: 4 high BMI, 3 were unwillingness to quit smoking. Donors older than 50 years and those with BMI over 28 were less likely to be accepted for donation.

CONCLUSION: This study described non-medical aspects were a major cause of donation discontinuation. Therefore, it is essential to explore all socioeconomic issues and their understandings on transplant process before recruiting potential donors to undergo extensive medical assessment.

Clinical Characteristics	Number (N)	Percentage (%)
Male	24	50
Female	24	50
Mean Age \pm SD	46.4 \pm 1.414	
Youngest Age for Donor	23 years old	
Eldest Age for Donor	57 years old	
Youngest Age for Recipient	6 months old	
Eldest Age for Recipient	17 years old	
Knowledge about LDLT		
Informed by Doctor	31	64.6
Self interested	17	35.4
Relationship to Recipient		
Mother	21	43.8
Father	23	47.9
Sister/ Brother	2	4.2
Auntie	1	2.1
Grandmother	1	2.1
Highest BMI	38.2	
Lowest BMI	16.3	
Mean BMI \pm SD	26.5 \pm 15.27	
Smoking status in 24 males		
Active smoker	14	58.3
Non smoker	10	41.2
Willingness to stop smoking	11	78.6
Comorbidities among Donor*		
Hypertension	6	12.5
Diabetes	1	2.1
Hyperlipidaemia	4	8.3
Bronchial asthma	2	4.2
Others	5	10.4
Aetiology of liver disease in Recipient		
End stage liver disease post Kasai Biliary Atresia	23	54.8
End stage liver disease missed Biliary Atresia	11	26.2
Caroli's Disease	1	2.4
Acute liver failure/ Acute on chronic liver failure	2	4.8
Others	5	11.9

*One potential donor may have more than one comorbidities

Causes of Donation discontinuation	Number (%)
Donor-related factors*	
Medical problems	10
High BMI/ inability to lose weight	4
Not keen to stop smoking	3
Withdrawal of donation consent	5
Anatomy related problem	2
Logistic and social related issues	6
Recipient-related factors	3
Recipient passed away during LT evaluation	3
ABO incompatibilities	2

One potential donor may have more than one cause of discontinuation

CHARACTERIZING HEPATOCELLULAR CARCINOMA (HCC) CASES AND SURVIVAL ANALYSIS IN MALAYSIA

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Hospitals based HCC registry was recently developed in March 2022 for more comprehensive HCC cases registration. A few hospitals have involved in this project and this analysis was performed base on 85 cases reported by 4 hospitals across the country in 3 months (21st March - 19th June 2022). The aims of this analysis are to determine clinical characteristics of this disease and to determine overall survival from diagnosis to date of death due to any cause. Survival status was obtained from the National Registration Department for patients who were diagnosed before 31st Dec 2021.

The mean age of patients at diagnosis with HCC was 59.7 (\pm 10.11) years, with 76.5% of patients being male (N=65). More than half are Malays (44, 51.8%) followed by Chinese (n 30, 35.3%) and Indians (n =8 ,9.4%). Only 56.8% patients have significant elevated Alpha-fetoprotein at diagnosis. The diagnosis of HCC was made based on imaging mainly five-phase computed tomography scan in 95% (n=81) of patients, and followed by significant raised Alpha-fetoprotein. Only 37.6% (n=32) have clinical symptoms to raise suspicion of HCC at diagnosis. Abdominal pain and ascites accounted for the 2 most common clinical symptoms at diagnosis. Almost 50% of patients was diagnosed based on incidental findings during routine imaging surveillance. The most common aetiology for HCC was HCV infection, which accounted for 36.5 % of the patients, while 30.6 % of patients had CHB infection. The third commonest aetiology was NAFLD which accounted on almost 10% of cases. Non-cirrhotic HCC was found in 4.7% of patients (n=4). More than one third of patients presented with Child-Pugh Class A (score 4-6) upon diagnosis. According to Barcelona Clinic Liver Cancer (BCLC) staging, 2 (2.4%), 18 (21.2%), 20 (23.5%), 19 (22.4%) and 25 (29.4%) patients had BCLC 0, A, B, C and D respectively at diagnosis. HCC was diagnosed in 70 patients up to 31st December 2021. Of these, 41 patients (58.6 %) were found still alive up to the date with median survival of 23.6 months (95% CI: 0 - 47.6 months).

1. Characteristics of patients with hepatocellular carcinoma.

Characteristics	n (%)
Gender	
Male	65 (76.5)
Female	20 (23.5)
Age	59.7 (10.6) ^a
Center of care	
Hospital Kuala Lumpur	70 (82.4)
Hospital Raja Perempuan Zainab II, Kota Bahru	6 (7.1)
Hospital Sultanah Aminah, Johor Bahru	3 (3.5)
Hospital Sultanah Nur Zahirah, Kuala Terengganu	6 (7.1)
Ethnicity	
Malay	44 (51.8)
Chinese	30 (35.3)
Indian	8 (9.4)
Others	3 (3.5)
Alpha-fetoprotein level at diagnosis	
<20 ng/mL	32 (37.6)
≥20 ng/mL	42 (49.4)
N/A	11 (12.9)
Investigation for diagnosis^b	
Clinical	32 (37.6)
Imaging	81 (95.3)
Tumor markers	48 (56.5)
Histology	26 (30.6)
Cytology	1 (1.2)
BCLC staging at diagnosis	
0 (very early)	1 (1.2)
A (early stage)	18 (21.2)
B (intermediate stage)	20 (23.5)
C (advanced stage)	19 (22.4)
D (terminal stage)	25 (29.4)
N/A	2 (2.4)
Primary site of tumor	
Right	36 (42.4)
Left	13 (15.3)
Bilateral	15 (17.6)
Multicentric	17 (20.0)
N/A	4 (4.7)

Etiology of liver disease	
Chronic hepatitis B	26 (30.6)
Chronic hepatitis C	31 (36.5)
Chronic hepatitis B and C	2 (2.4)
Non-alcoholic fatty liver disease	8 (9.4)
Autoimmune disease	2 (2.4)
Alcoholic liver disease	2 (2.4)
N/A	14 (16.5)
Cirrhosis	
No	4 (4.7)
Child-Pugh class A (score 4-6)	33 (38.8)
Child-Pugh class B (score 7-9)	25 (29.4)
Child-Pugh class B (score 10-15)	23 (27.1)
Presence of diabetes mellitus	29 (34.1)
Symptoms at presentation^c	
Abdominal pain	17 (20.0)
Hepatomegaly	3 (3.5)
Ascites	24 (28.2)
Jaundice	12 (14.1)
Splenomegaly	1 (1.2)
Hepatic encephalopathy	4 (4.7)
Upper gastrointestinal bleeding	13 (15.3)
Asymptomatic/ incidental finding	38 (44.7)
Treatment	
Surgical intervention	4 (4.7)
Local ablation	8 (9.4)
Systemic therapy	2 (2.4)
Chemoembolization and transcatheter therapies	18 (21.2)
Selective internal radiation therapy	1 (1.2)
Best supportive/ palliative care	50 (58.8)
Survival status (until 31 Dec 2021)^a	
Alive	41 (58.6)
Death	29 (41.4)

BCLC, Barcelona Clinic Liver Cancer; N/A, not available.

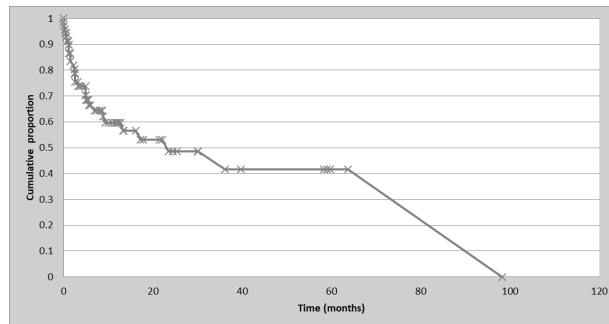
^a Presented as mean (standard deviation).

^b An individual could have more than one investigation.

^c An individual could have more than one symptom.

^d Data of patients diagnosed before 31 Dec 2021 was obtained from the National Registration Department; updated until 31 Dec 2021.

Median survival = 23.6 months (95% CI: 0 - 47.6 months)



Kaplan-Meier analysis

BIOLOGIC EXPOSURE OF SHORT DURATION RESULTS IN A MARKED REDUCTION IN CUMULATIVE SURGICAL RATES IN MALAYSIAN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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INTRODUCTION: Crohn disease (CD) is a chronic progressive disease that is associated with high surgical rates. In view of our recent practice is starting biologic therapy early, we sought to determine whether there were differences in surgical rates between patients who were exposed or not exposed to biologic therapy.

METHODOLOGY: This was a retrospective, single-centre study conducted in a tertiary centre in Malaysia. The biologic-exposed group was defined as any patient with exposure for at least 6-8 weeks. Demographics, clinical characteristics and time to significant surgical intervention (ie bowel resection) were recorded and cumulative surgical rates were calculated.

RESULT: A total of 158 patients were recruited: 85 from the biologic-exposed cohort and 73 from the non-biologic cohort. Baseline demography was as follows: Male 56.3% Female 43.7%; Malays 21.5% Chinese 33.5% Indians 43.0%. Median duration of disease was 11.9 years (1.4, 30.4). Differences seen in terms demographics, disease location and behavior at diagnosis between the two cohorts were not significant. For the biologic group, median time to commencing therapy was 26.4 months (0.0, 165.6) and median duration of therapy was 13 months (IQR 1.5,130.0). The biologic-exposed group had significantly lower cumulative surgical rates compared to the non-biologic group; 2.3% versus 21.9% at 1 year; 7.3% versus 31.5% at 5 years and 15.6% versus 39.7% at ten years.

CONCLUSION: Surgical rates were significantly lower in CD patients who are biologic-exposed even for a short duration. This confirms that the role of biologic therapy in altering the disease progression of CD, even in a limited resource setting.

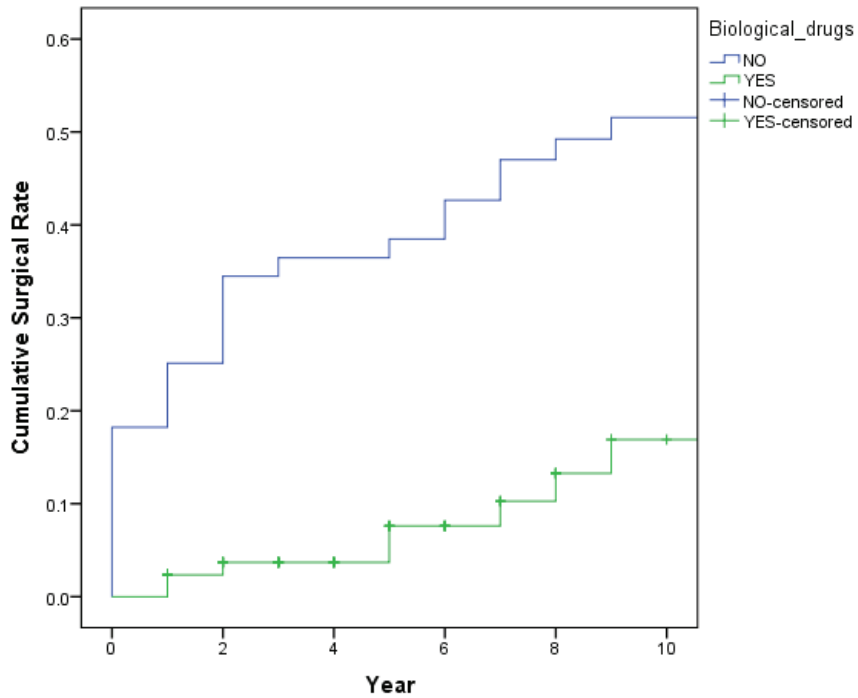


Figure 1 Kaplan-Meier graph on 10-year cumulative surgical rates.

Cumulative Surgical Rates	1 year	5 year	10 year	15 years
Non-Biologics	21.9%	31.5%	39.7%	45.0%
Biologics	2.3%	7.3%	15.6%	25.6%

Log-Rank = .001

Table 1 Demographics and Clinical Characteristics.

Demographic characteristics	Non-biologics (n=73)	Biologics-exposed (n=85)	Total (n=158)	p-value
Gender (%)				.523
- Male	53.4	58.8	56.3	
- Female	46.6	41.2	43.7	
Age of diagnosis (y), Median (IQR)	22.6 (1, 65)	22.9 (6, 56)	22.7 (1, 65)	.577
Disease Duration (y), Median(IQR)	17.4 (4.4, 30.4)	6.4 (1.4, 25.4)	11.9 (1.4, 30.4)	<.001
Race (%)				.487
- Malay	19.2	23.5	21.5	
- Chinese	39.7	28.2	33.5	
- Indian	39.7	45.9	43.0	
Location (%)				.880
- Terminal Ileum	23.3	25.9	24.7	
- Colon	41.1	40.0	40.5	
- Ileocolon	32.9	29.4	31.0	
- Upper gastrointestinal	2.7	4.7	3.8	
Phenotypes (%)				.004
- B1 Non-stricturing, non-penetrating	43.8	51.8	48.1	
- B2 Stricturing	32.9	11.8	21.5	
- B3 Penetrating	23.3	36.5	30.4	
Surgery (%)	44.4%	12.8%	27.2	<.001
Time to commence biologics, (mo) Median (IQR)	-	26.4 (0.0, 165.6)	-	
Year of biologics exposure, (mo) Median (IQR)	-	13.0 (1.5, 130.0)	-	

GASTROINTESTINAL ENDOSCOPY IN A TERTIARY HEART INSTITUTE

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OBJECTIVES: To determine the prevalence of GI bleeding among the patients from a tertiary heart institute who underwent GI endoscopy, the indications of endoscopy, the prevalence of IDA in these patients, its baseline characteristics and look into its associations with the socio-demographic factors, medications, and comorbidities

METHODOLOGY: A retrospective cross-sectional study involving data collection from patient's case notes in IJN and HKL from the 1st of January 2018 to 31st of December 2019.

RESULTS: 157 endoscopic procedures were performed during the study period. Out of which 62 (39.5%) cases showed endoscopic findings with potential GI bleeding, 94 (59.9%) were normal/ showed findings without potential source of GI bleeding. Indications for referral include anemia, IDA, GI bleeding, dyspepsia, alterations in bowel habit, and positive stool for occult blood test. Incidence of IDA in our cohort were 77(73.3%) patients.

CONCLUSION: Only referral with indication of GI bleeding was significantly associated with positive bleeder or endoscopic findings with potential bleeder ($p=0.0008$).

Referral for anemia albeit statistically significant ($p=0.0492$), was associated with a normal or findings with no bleeding potential.

IDA and a positive stool occult blood test which was traditionally thought to be associated with GI lesions did not show any positive correlation. This study could not find any association between GI bleeding and patient's characteristics, heart conditions, comorbidities and antiplatelets/anticoagulation regimens including those on double or triple treatment.

A CASE OF SEVERE CMV COLITIS COMPLICATED WITH SEPTIC SHOCK, MEGACOLON AND PERFORATION IN AN IMMUNOCOMPETENT PRISONER

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CMV colitis often occurs in immunocompromised or HIV infected patients. It also commonly affects patients with inflammatory bowel disease, due to localized impairment of mucosal immunity, and occasionally occurs in those without previous medical illness. Severe CMV colitis may result in toxic megacolon or perforation. Here we report on a case of a middle aged prisoner with no previous medical history, who had a short history of diarrhea and abdominal pain, and initially presented in septic shock. He subsequently developed acute lower GI bleeding. Imaging showed marked colon dilatation. Limited sigmoidoscopy revealed friable mucosa with diffuse ulceration. He subsequently developed colon perforation and required partial colectomy, but died of septic shock shortly after. Histopathological examination of the biopsy and colectomy specimens revealed CMV colitis. This case highlights that CMV colitis should be considered in the differential diagnosis of severe infective colitis with colon dilatation, including in immunocompetent patients. Incarcerated people may be a group of such patients who are at risk. Sigmoidoscopy should be considered in such cases to obtain tissue biopsies to confirm the diagnosis.

CONCLUSION: Severe CMV colitis in immunocompetent patients is rare, but can lead to complications of megacolon, septic shock and perforation. CMV colitis should be considered as a differential diagnosis in severe infective colitis with colon dilatation, even in immunocompetent patients. High index of suspicion is important, and after abdominal imaging, careful sigmoidoscopy with biopsies will confirm the diagnosis. Early diagnosis with early initiation of antiviral treatment should allow for improved outcomes once CMV infection is confirmed.

DETECTION OF EXPRESSED PRO-INFLAMMATORY CYTOKINE INTERLEUKIN-32 IN GASTRIC CANCER PATIENTS FROM UKM MEDICAL CENTRE (UKMMC) USING IMMUNOHISTOCHEMISTRY (IHC)

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Muaatamarulain Mustangin⁴**

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Gastric cancer, despite being on the decline in Malaysia, is still a major concern as most cases present at the later stages. The proinflammatory cytokine, Interleukin-32 (IL-32) is known to be upregulated in various human carcinomas including gastric cancer and is said to play a role in the progression of the disease. The main aim of this study was to determine if IL-32 was highly expressed in Malaysian gastric cancer patients and if it was related to any sociodemographic or clinicopathological features. 48 cases of gastric adenocarcinoma were included in this study and tested against 41 controls. IL-32 expression was tested through immunohistochemistry (IHC) using rabbit polyclonal, anti-IL-32 antibodies.

Our findings revealed that the expression of IL-32 was significantly increased in the gastric cancer group. Strong staining of IL-32 was detected in the cytoplasm of gastric tumour cells. However, no significant association was detected between the expression of IL-32 and various clinicopathological features.

Other studies have shown that IL-32 played a role in gastric cancer progression by encouraging metastasis and was a marker for poor prognosis. Our study was limited by its small sample size and thus it would be beneficial to carry out future studies that included more tertiary hospitals so we could further elucidate the role of IL-32 in gastric cancer patients in Malaysia.

THE COLD REVOLUTION IN EVOLUTION

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INTRODUCTION: Colorectal polyps are precursors to colorectal cancer (CRC). In a two-decade-long national follow-up, CRC mortality is reduced by 53% following screening colonoscopy and polypectomy. Various endoscopic resection methods are available, and the choice of use is dependent on polyp size, morphology, and location. Cold snare polypectomy (CSP) is now the standard resection modality for diminutive ($\leq 5\text{mm}$) lesions, given its better complete resection rates, adequate tissue sampling for histology, and low complication rates.

METHODOLOGY: We retrospectively analysed prospectively collected data on all resected polyps measuring $\leq 9\text{ mm}$ in our repository from February 2020 to June 2022. The dedicated cold snares used throughout the study were the Olympus SnareMaster Plus (10 mm), STERIS Exacto[®] Cold Snare, and Boston Captivator[™] Cold Single-use Snare.

RESULTS: There was a total of 728 polyps from 272 patients in this study, for which 7 of the polyps resected (0.009%) developed prolonged bleeding (lasting > 30 seconds) requiring endoscopic intervention via hemoclips. Two of these polyps were inflammatory, while the other five were adenomatous lesions. There were no reported cases of delayed bleeding or perforation.

DISCUSSION: Cold snare polypectomy is an established modality for resection of diminutive polyps and possibly larger lesions in the future. Its safety profile is favoured as it eliminates the risk of delayed bleeding and perforation associated with electrocautery. Immediate bleeding is expected and is clinically insignificant as spontaneous hemostasis frequently occurs. In the case of prolonged bleeding, this can be dealt with endoscopically in the same setting.

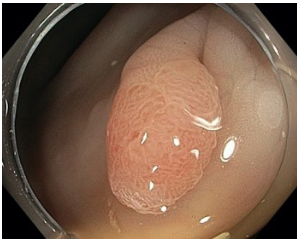


Figure 1A: Polyp on white light

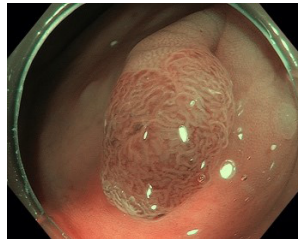


Figure 1B: Polyp on narrow-band imaging

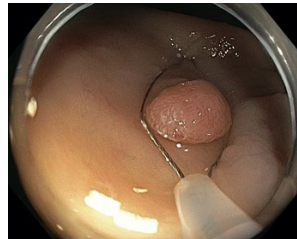


Figure 1C: Cold snaring in progress

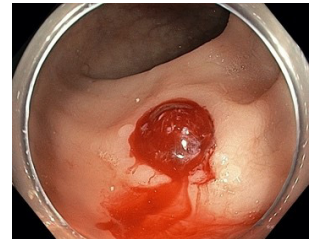


Figure 1D: Immediate bleeding after cold snare polypectomy

ACCURACY OF NICE PREDICTION FOR DIMINUTIVE COLORECTAL POLYPS - A STEP FORWARDS TO EMBRACING ARTIFICIAL INTELLIGENCE

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INTRODUCTION: More than 90% of colorectal polyps encountered during colonoscopies are diminutive ($\leq 5\text{mm}$). They are mostly benign and do not possess advanced histological features. The current recommendation mandates endoscopic polypectomy and histological evaluation for surveillance decisions. Improvements in endoscopic technology and increasing adoption of narrow-band imaging (NBI) allow endoscopists to predict polyp histology more confidently. Thus, the American Society for Gastrointestinal Endoscopy (ASGE) has set the bar for negative predictive value (NPV) at $\geq 90\%$ to establish the “diagnose-and-leave-behind” and “resect-and-discard” strategy. We aim to evaluate our standards against ASGE’s recommendation to assess our readiness to adopt optical diagnosis.

METHODOLOGY: We retrospectively analysed prospectively collected data on all diminutive polyps in our repository from February 2020 to June 2022. The colonoscopes used throughout the study were the Olympus CF-H190L and CF-HQ190L. The Olympus Evis Exera III was the operating endoscope system with a CLV-190 Xenon Light Source.

RESULTS: 481 (162 non-adenoma lesions, 319 adenomas) diminutive colorectal polyps were encountered and given a real-time optical diagnosis using the NBI International Colorectal Endoscopic (NICE) classification during colonoscopy. We subsequently compare the NBI diagnosis of these polyps against the histological diagnosis. The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of NBI in making an optical diagnosis of the adenomatous lesion were 97.50%, 94.44%, 97.19%, 95.03%, and 96.47%, respectively.

DISCUSSION: Our performance surpasses the ASGE thresholds and is similar in standards to other renowned centres. This key finding supports our readiness to embrace optical diagnosis using NBI for the “diagnose-and-leave behind” and “resect-and-discard” strategy for relevant lesions without subjecting all polyps for removal and submitting unnecessary specimens to pathologists.



Figure 1A: NICE 1 polyp on white light

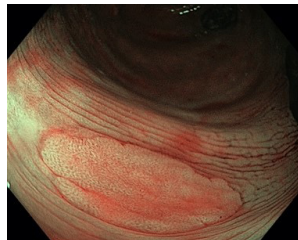


Figure 1B: NICE 1 polyp on NBI



Figure 1C: NICE 2 polyp on white light



Figure 1D: NICE 2 polyp on NBI

TRADITIONAL SERRATED ADENOMA - FACING THE FUTURE PROSPECTS OF OPTICAL DIAGNOSIS TO PREVENT OVERTREATMENT

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INTRODUCTION: Traditional serrated adenomas (TSA) account for less than 2% (0.008% in our centre) of all colonic polyps. They are encountered in the rectosigmoid colon and are traditionally assumed to evolve from hyperplastic polyps (HP) and sessile serrated adenomas (SSA). Unlike adenomas, HP and SSA, there is no well-defined narrow-band imaging (NBI) criteria for TSA, thus mandating the need for pathological evaluation to elicit pathognomonic findings. Current endoscopic descriptions are limited, and one review equated NBI findings to leaf fronds packed with irregular, expanded brown capillaries.

METHODS: Case series of five consecutive TSA polyps encountered in our polyp repository from February 2020 to June 2022. These polyps were then re-examined by an expert in image-enhanced endoscopy and compared to the current NBI description of TSAs.

DISCUSSION: The NBI assessment for all our TSA polyps was challenging owing to the lack of a standardized classification, explaining why our interpretations yielded false predictions of high-grade dysplastic tubulovillous adenomas. These were low confidence predictions as a confusing array of cloud-like mucosal surfaces reminiscent of an SSA and Kudos IV cerebriform pit patterns with tortuous capillary networks, indicating the co-occurrence of villous adenoma was observed (Figure 1-4). Compounding the already variable morphology, we noticed that intermediately-sized low-grade dysplastic lesions were free from adenomatous features, whereas bigger (20-150 mm), non-dysplastic lesions possessed TVA appearances; a direct distinction from SSA lesions considering how TVA seems to arise from SSA. The heterogeneity observed, although complex, is pertinent for future classifications in guiding diagnosis and deciding between endoscopic from surgical management. Until then, histological evaluation remains indispensable to establish a foolproof diagnosis.

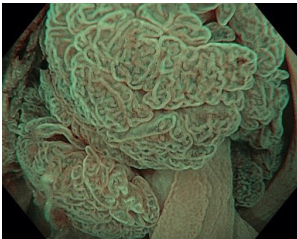


Figure 1: Cloud like surface observed on NBI in addition to multiple, branching capillary network in a sigmoid polyp

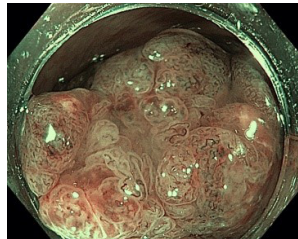


Figure 2: Tortuous capillary network observed on NBI in a large rectal polyp

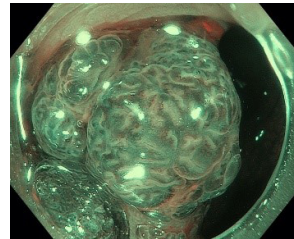


Figure 3: Cloud-like surface with engorged capillary network and pits/glands on a sigmoid polyp

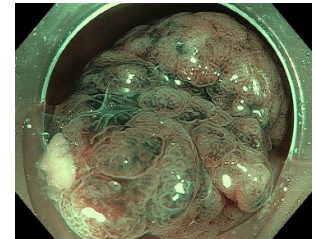


Figure 4: Cloud-like surface on a large rectal polyp observed on NBI

TURNING DOWN THE HEAT FOR A PATIENT WITH 120 POLYPS - A CASE REPORT

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INTRODUCTION: Serrated polyposis syndrome (SPS) is diagnosed based on the cumulative lifetime number of serrated polyps (SP); hyperplastic polyps, sessile serrated adenomas (SSA), and traditional serrated adenomas in a patient. Recent World Health Organization (WHO) classification requires either one of two criteria to be present for SPS diagnosis; (1) ≥ 5 SPs proximal to the rectum, all being ≥ 5 mm in size, including ≥ 2 ; that are ≥ 10 mm; or (2) >20 SPs of any size distributed throughout the colon, with ≥ 5 being proximal to the rectum. We present a patient with SPS and highlight the safety, feasibility, and efficacy of staged endoscopic resection to remove over 100 polyps.

CASE PRESENTATION: A 51-year-old gentleman presented for colonoscopy following nine months of altered bowel habits. Index colonoscopy with narrow-band imaging (NBI) demonstrated multiple SPs throughout the colon, with two large SSAs (≥ 20 mm) removed via endoscopic mucosal resection (EMR) (Figure A & B). Staging colonoscopies over the next three months resulted in strategic and sequential complete resection of 120 polyps from the cecum to the rectum with a cumulative timing of 70 minutes, using the cold snare polypectomy (CSP) and cold snare EMR (CSEMR) techniques (Figure C & D).

DISCUSSION: SPS accounts for 10-15% of colorectal cancer cases, with SSA representing 3-9% of all serrated lesions. These lesions are notoriously flat and easily missed owing to the morphology and location in the right colon (up to 20% miss rates), resulting in underdiagnosis compounded by the lack of awareness of SPS. Nevertheless, with improved optics permitting better detection, border delimitation, and lesion characterization, endotherapy with regular colonoscopic surveillance is fast becoming the standard of care, with surgery reserved for advanced tumours.

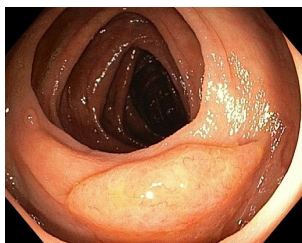


Figure A: Pale sessile lesion in the proximal transverse colon

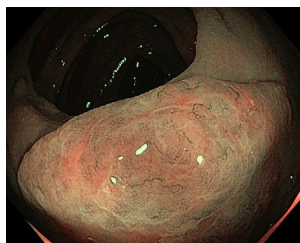


Figure B: Cloud-like surface, inconspicuous margins, irregular shape, and varicose microvascular vessels satisfying 4 out of 5 Modified SANO IIo criteria for an SSA lesion

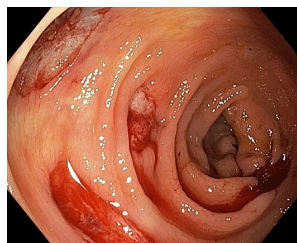


Figure C: Systematic and sequential cold snare polypectomies for SPs encountered in the left colon

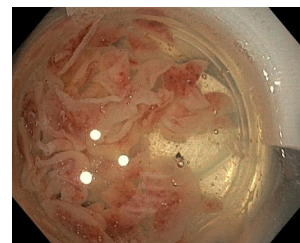


Figure D: One of the specimen pots containing more than 40 resected lesions

COMPLEX ENDOSCOPIC COLORECTAL POLYPECTOMY; FIRST-HAND ACCOUNT IN HUNDRED CASES

Cha Chee Tan, Keng Hoong Chiam, Valentine Philiminus, Raman Muthukaruppan

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INTRODUCTION: Recent improvements in therapeutic endoscopy have permitted the adoption of advanced polypectomy techniques for intermediate and large colorectal polyps. The various innovation in submucosal lifting agents, endoscopic snares, knives, and full-thickness resection (FTR) devices has resulted in an explosion of literature describing high success with acceptable complication rates. In this abstract, we aim to describe our first hundred cases in complex polypectomies.

METHOD: We retrospectively analysed prospectively collected data on 100 resected colorectal polyps measuring ≥ 10 mm in our repository from January 2020 to June 2022. Patient and polyp demographics were evaluated for treatment success, endoscopic recurrences and complications.

RESULTS: A total of 88 patients (55 males, 33 females) presented to us during the study period for endoscopic resection. We used the SMSA scoring system to assess procedural complexities and tailor appropriate resection techniques accordingly (Table 1). Inherent complications of delayed bleeding and perforation were 0% and 0.01%, respectively. Recurrences occurred in only two cases at a rate of 0.02% and required only endoscopic management.

DISCUSSION: Our study reported high success rates with very low complications in bleeding, perforation, and tumour recurrence. This outcome is attributed primarily to a well-resourced centre supported by state-of-the-art endoscopic equipment and various accessories. Furthermore, detailed lesion characterisation with narrow-band imaging, availability of on-demand, dual-focus, and high magnification colonoscopes, and strategic planning before resection were preliminary steps undertaken for all polyps regardless of size. We believe these strategies are pertinent in achieving better outcomes and providing patients with an alternative to surgery, especially for massive lesions with no features of deep submucosal invasion.

Table 1. Demographic per patient & per polyp. CSP, Cold Snare Polypectomy; HSP, Hot Snare Polypectomy; EMR, Endoscopy Mucosal Resection; ESD, Endoscopic Submucosal Dissection; FTR, Full Thickness Resection

Demographic		N
Patient		
Age (mean ± SD)		60.31 ±12.2
Gender		
	Male	55
	Female	33
Polyps		
Size		
	Intermediate (10-19mm)	62
	Large (≥ 20mm)	38
(mean polyp size= 23.7)		
Morphology		
	Pedunculated	36
	Sessile	34
	Flat	20
	Lateral spreading tumour	10
SMSA score		
	SMSA 2	77
	SMSA 3	12
	SMSA 4	11
Endoscopic Resection		
	CSP	9
	HSP	22
	EMR	58
	ESD	9
	FTR	2
Resection Modality		
	En Bloc	84
	Piecemeal	16
Complication		
	Delayed Bleeding	0%
	Perforation	0.01%
	Recurrence	0.02%
Histology		
	Adenoma	72
	Sessile Serrated Adenoma	17
	Traditional Serrated Adenoma	5
	Miscellaneous	6

ACCURACY OF JNET PREDICTION FOR COMPLEX COLORECTAL POLYPS

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INTRODUCTION: The development of the Japan Narrow-Band Imaging (NBI) Expert Team (JNET) classification assists in linking advanced colorectal lesions with appropriate modern endoscopic therapy and conventional surgical treatment. It comprises four categories subdivided into JNET type 1, 2A, 2B, and 3, each representing the individual histology of the lesions characterised. As with other NBI classifications, JNET derives its optical diagnosis from two unique polyp features; the vessel pattern and surface pattern, giving rise to the pathology and invasion depth of the tumour. This validation study evaluates our accuracy, sensitivity, and negative predictive value for colorectal polyps with advanced pathology (type 2B) against type 2A lesions.

METHOD: We retrospectively analysed prospectively collected data on all relevant polyps in our repository from January 2020 to June 2022. The colonoscopes used throughout the study were the Olympus CF-HQ190I/L and PCF-HQ190L. The operating endoscope system included Olympus Evis Exera III with CLV-190 Xenon Light Source.

RESULTS: Seventy-one excised colorectal polyps of varying dysplastic and neoplastic categories were encountered and given a real-time optical diagnosis using the JNET classification. We subsequently compared the predicted NBI diagnosis against histology, for which the accuracy of type 2B lesions diagnosed with high confidence was 92.96%. The differentiation of type 2B from type 2A lesions achieved sensitivity, specificity, positive predictive value, and negative predictive values of 90.48%, 94.00%, 86.36%, and 95.92%, respectively.

DISCUSSION: Our study supports the adoption of JNET classification as a management tool for complex colorectal lesions, providing a high-confidence optical diagnosis that parallels precise histopathological results. Unlike the NICE classification, the learning curve for JNET is invariably steeper and requires a magnification colonoscope.

	LGD	HGD/IMC
JNET 2A	47	2
JNET 2B	3	19

Table 1. JNET prediction against histology. LGD, low grade dysplasia; HGD/IMC, high grade dysplasia/Intramucosal carcinoma

OVER-THE-SCOPE-CLIPS (OTSC) IN DAILY ENDOSCOPIC ROUTINE

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INTRODUCTION: New endoscopic accessories has resulted in a growing trend of gastroenterological management . One such innovative accessories are over-the-scope clips (OTSC) that have seen novel uses in various gastrointestinal lesions, be it iatrogenic or pathological such as tackling refractory bleeders that were unresponsive to conventional methods, sealing gastrointestinal leaks and perforations, closure of intestinal fistulae, and resection of early colorectal cancers.

METHOD: We performed a retrospective analysis of prospectively collected data from July 2020 to April 2022 of over-the-scope Padlock Clip Defect Closure System (STERIS) with a tissue chamber depth of 1.0 cm for a variety of indications.

CONCLUSION: The attractive technical aspects of these clips include its ability to encompass and approximate a large area of tissue or bleeding vessel and also its ease of endoscopic installation. The emerging role of Padlock Clips in the field of endotherapy has thus far been successful and is a novel OTSC with benefits that include a safe, simple, and rapid deployment.

Patient no	Age ,years	sex	Number of clip	indication	Site	Technical success	Outcome
1	67	m	1	Early ascending colon cancer (failure to lift)	Ascending colon	yes	Full thickness resection
2	59	m	1	Postpolypectomy intraprocedural refractory bleeding	rectum	yes	Hemostatis secured
3	81	m	1	Bilroth 1 anastomotic ulcer refractory bleeding	stoma	yes	Hemostatis secured(patient seccumbed to severe sepsis)
4	68	f	1	Colovesical fistula	Sigmoid colon	yes	Clinical and endoscopic resolution
5	64	f	1	Iatrogenic duodenal perforation	duodenum	Yes	Clinical resolution
6	62	f	1	Refractory bleeding post endoscopic resection of gastric polyp	stomach	Yes	Clinical resolution

Patient no	Age ,years	sex	Number of clip	indication	Site	Technical success	Outcome
7	59	f	1	Iatrogenic perforation from dysplastic GOJ polyp resection(not amenable to hemoclips)	GOJ	yes	Clinical resolution
8	65	m	1	Refractory bleeding following endoscopic resection of prepyloric polyp	stomach	no	insufficient space to allow placement
9	29	m	1	Duodenal ulcer ,F2A	duodenum	yes	Clinical resolution
10	41	f	1	Sydney DMI IV, post EMR of subepithelial lesion at sigmoid colon	colon	yes	Clinical resolution

OPTIMIZING THE DETECTION OF SESSILE SERRATED ADENOMA WITH THE MODIFIED SANO CLASSIFICATION

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INTRODUCTION: The Modified SANO (MS) classification is a valuable tool that builds on the original SANO classification and incorporates sessile serrated adenoma (SSA) as its distinguishing factor that is absent in others like NICE, JNET, Hiroshima, Showa and Jikei. In addition to capillary patterns, MS criteria integrate colour description and surface patterns to enhance its diagnostic precision. Moreover, it outclasses the established NICE and the recent WASP classification in terms of accuracy and consistency. This validation study evaluates our accuracy, sensitivity, and negative predictive value for SSA against other histology using the MS classification.

METHOD: We retrospectively analysed prospectively collected data on all colorectal polyps characterised with magnification (up to 100x) scopes in our repository from January 2020 to June 2022. The colonoscopes used throughout this study were the 190 series with dual focus and magnification capability (Exera III NBI system; Olympus Co. Ltd, Japan).

RESULTS: 284 (84 SSA and 200 non-SSA lesions) colorectal polyps were encountered and given an optical diagnosis using the MS classification. We subsequently compare it against the histological results. The accuracy for diagnosis of SSA/P with high confidence using Ilo on MS classification was 95.04%, and differentiation of SSA/P from other lesions achieved a sensitivity, specificity, positive predictive value, negative predictive value of 95.24%, 95.00%, 88.89% and 97.94%, respectively.

DISCUSSION: The MS classification is a powerful yet easy-to-learn NBI diagnostic adjunct that helps distinguish SSA from other colorectal lesions. Compared to the WASP algorithm that relies on multiple cascades of checklists and potential overlaps, the MS classification, namely Type Ilo, focuses on two dominant findings and five supportive features of SSA. This way, with more features present, confidence level and histological accuracy increase exponentially.

TECHNICAL CHALLENGES OF POLYLOOP-ASSISTED POLYPECTOMY - CASE SERIES IN A SINGLE CENTRE EXPERIENCE

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INTRODUCTION: Endoscopic resection of pedunculated polyps carries a risk of immediate and delayed post-polypectomy bleeding. Conventional prophylactic measures to prevent bleeding include pre-resection adrenaline injection, hemostatic clips, and endoloops. The choice depends on personal preference as well as polyp morphology and location. In a case series, we describe our experiences and challenges encountered during the endoloop-assisted polypectomy technique.

METHODOLOGY: We selected the Olympus PolyLoop Ligation Device for all our cases as this was the only endoscopic accessory available. We define technical success as the successful deployment of the PolyLoop at the stalk base without loop dislodgement following snare resection. The resultant complications that arise from failed PolyLoop deployment and alternative treatment strategies are summarized in Table 1.

RESULTS (REFER TABLE 1):

Table 1: Case series of PolyLoop-assisted polypectomies.

No	Site	Polyp size (mm)	Stalk thickness (mm)	Stalk length (mm)	Technical success (reasons)	Complications (further modalities)	En-bloc Resection
1	Gastric corpus	20	15	15	Yes	No	Yes
2	Sigmoid	15	15	20	No (broad stalk)	Bleeding (secured with hemoclips and thermal therapy)	Yes
3	Rectum	40	35	30	No (bulky polyp)	Bleeding (secured with hemoclips and thermal therapy)	No
4	Pyloric antrum	20	10	10	No (thin and short stalk)	No	Yes
5	Sigmoid	25	15	20	Yes	No	Yes
6	Sigmoid	18	15	15	Yes	No	Yes
7	Ascending colon	15	15	15	Yes	No	Yes

No	Site	Polyp size (mm)	Stalk thickness (mm)	Stalk length (mm)	Technical success (reasons)	Complications (further modalities)	En-bloc Resection
8	Sigmoid	20	15	15	Yes	No	Yes
9	Sigmoid	18	15	15	Yes	No	Yes
10	Sigmoid	22	15	20	No (bulky polyp)	Bleeding (secured with hemoclips and thermal therapy)	No
11	Descending	22	12	15	Yes	No	Yes
12	Sigmoid	50	15	10	No (bulky polyp)	No (switched to ESD)	Yes
13	Gastric corpus	25	15	10	No (short stalk)	Bleeding (secured with adrenaline and hemoclips)	Yes
14	Transverse colon	50	20	20	No (bulky polyp)	Bleeding (secured with adrenaline and hemoclips)	No

DISCUSSION: Our success rates were marginal at 50%. Out of the seven failed cases, five were because of bulky polyps and insufficient luminal space for optimal PolyLoop deployment. Most of these polyps arise from the narrower left-sided rectosigmoid junction. The remaining failures were a combination of operator unfamiliarity with the deploying mechanisms of the PolyLoop, and inadequate stalk length and thickness to permit PolyLoop closure. Hence, the need for proper case selection and the presence of experienced operators. In contrast, the success of the other half of our cases was due to the participation of seasoned gastrointestinal assistants and endoscopists who could operate the PolyLoop well, in addition to selecting the most appropriate hemostatic modality based on the polyp location and morphology. Above all, an R0 resection is the only clinical success essential in enabling detailed histological evaluation, prognostication, and subsequent surveillance decisions.

ACCELERATED DOSE OF USTEKINUMAB AS RESCUE THERAPY IN ACUTE SEVERE ULCERATIVE COLITIS

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We report a first case to our knowledge of acute severe ulcerative colitis (ASUC) which was successfully treated with off label accelerated ustekinumab monotherapy.

A 75-year-old man with recently diagnosed ulcerative colitis (UC) on mesalazine, ischemic heart disease, congestive heart failure (CCF), diabetes and chronic obstructive pulmonary disease (COPD) presented with bloody diarrhoea 6 times/day, severe lethargy and fever. On examination, his temperature was 38°C, pulse rate was 90 beats per minute, blood pressure was 128/68 mmHg, abdomen was soft but mildly tender. Haemoglobin was 91 g/dL, albumin was 23 g/L, C-reactive protein was 144 mg/L and CT abdomen showed diffuse colonic thickening but no dilatation. Unprepared left flexible sigmoidoscopy showed severe inflammation with deep ulceration (Figure 1). *Clostridioides difficile* and Cytomegalovirus (CMV) were ruled out. He was started on intravenous hydrocortisone 100mg qid but did not achieve adequate response and his diabetic control worsened. Although he was referred to the surgeons, he refused surgery. We were reluctant to start him on infliximab or cyclosporin because he has a high risk of infection as well as CCF and opted for ustekinumab in view of the more favorable side effect profile and relatively rapid onset of action. He was given an intravenous loading dose of 390mg followed by 90mg subcutaneous dose at week 2 and 6 with subsequent 8-weekly maintenance. He was in clinical remission by week 4 and repeat colonoscopy at week 24 showed complete mucosal healing with pseudopolyps and scar formation (Figure 2).

Although infliximab or cyclosporin is the established rescue therapy for ASUC¹, the older adult patient is at risk of significant adverse events from these therapies. Studies have shown that infliximab and cyclosporin can increase risk of infection and mortality in the elderly.^{2,3} Infliximab is also contraindicated in stage III/IV CCF.³ In view of this, we opted for ustekinumab although there is no data regarding its use in this setting. However, biologic clearance is much higher in ASUC, therefore accelerated therapy is often needed.^{5,6} We used the accelerated dose ustekinumab based on a few studies which showed that shortened dose interval of 2-weekly was safe.^{7,8} Our case highlights the potential efficacy of ustekinumab in treatment of ASUC in high-risk groups, but more data is required to recommend this approach over the current established therapies.

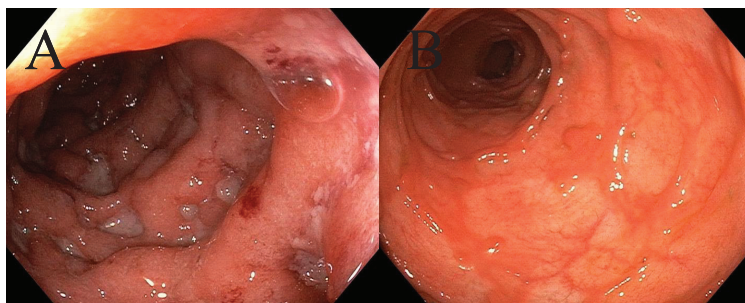


Figure 2. (A) Endoscopic appearance showing severe colitis and deep ulceration at presentation (B) Endoscopic appearance showing complete healing with pseudopolyps after 24 weeks of ustekinumab therapy

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AN UPDATE OF REGISTRY FOR PATIENTS WITH INFLAMMATORY BOWEL DISEASE AT UKM MEDICAL CENTRE, KUALA LUMPUR

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BACKGROUND AND OBJECTIVES: The clinico-epidemiological data of patients with inflammatory bowel disease (IBD), ulcerative colitis (UC) and Crohn's disease (CD) in Malaysia is still lacking. The objective of this study aimed to address this issue and to update the registry for our IBD patients.

METHODS: Retrospective analysis of UC and CD, diagnosed from January 1980 till December 2021 was conducted at our center.

RESULTS: 842 IBD patients [498 (59.1%) males, 344 (40.9%) females; 501(59.5%) UC and 341(40.5%) CD] were identified. The mean age of diagnosis; 43.7 years for UC and 26.2 years for CD. When stratified according to ethnicities; [IBD: Malay (26.4%), Chinese (15.8%) and Indian (57.5%); UC: Malay (39.2%), Chinese (12.1%) and Indian (48.7%); CD: Malay (38.9%), Chinese (9.5%) and Indian (51.6%)]. When stratified based on diseases classifications: UC; proctitis (11.1%), left-sided colitis (51.1%) and extensive colitis (37.8%), CD; isolated small bowel or ileal (12.3%), colonic (40.7%), ileo-colonic (46.9%) and upper gastrointestinal (0.1%). When stratified based on disease durations: less than 5 years (20.3%), 5 to 10 years (50.7%) and more than 10 years (29%). A total of 14.4% of CD patients had concurrent perianal disease. Extra intestinal manifestations (EIM) were observed more in CD (42.1%) as compared to UC (14.3%). IBD-related neoplasia occurred more in UC (1.7%, n=14) than in CD (0.2%, n=2). A total of 14.3% of CD patients and 6.1% of UC patients received biologic therapy.

CONCLUSION AND DISCUSSION: In our Centre, IBD, UC and CD are frequently present in young Indian male patients. Left sided UC and ileo-colonic CD predominated the diseases classification with EIM is mostly observed among CD patients. Nearly a third of our IBD patients have disease at least a decade and 16 (1.9%) of them have IBD-related neoplasia. Biologic therapy is used by a small minority of our IBD patients.

WHEN IS POEM TRULY EQUIVALENT TO LHM? A COMPARISON OF COMPLICATION RATES DURING THE LEARNING CURVE

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INTRODUCTION: Per-Oral Endoscopic Myotomy (POEM) has been shown to be an effective treatment for Achalasia, but the endoscopic technique required is complex and not routinely performed. We believe that, for any new procedure, competency can be demonstrated when the complication rate of a new procedure (POEM) equals that of an established one, ie Laparoscopic Heller's Myotomy + Fundoplication (LHM+F).

METHODS: A multicentre, retrospective cohort, comparing complication rates during the learning curve of POEM to a historical cohort of LHM+F, was conducted. A direct head-to-head comparison was performed, followed by a population pyramid of complication frequency. Case sequence was then divided into blocks of 5, and the complication rates during each block was compared to the historical cohort.

RESULTS: A total of 123 cases (LHM+F n=60, POEM n=63) were analysed. Mean age was lower for the POEM group (41.7 years vs 48.1 years, $p = 0.03$), but there was no difference in gender nor type of Achalasia. The POEM group recorded a shorter overall procedural time (125.9 minutes vs 144.1 minutes, $p = 0.023$) and longer myotomies (10.1cm vs 6.2cm, $p = 0.023$).

Complication rates were higher in the POEM group (20.6% vs 10.0%, $p=0.10$), but was not statistical significant. Complication frequency tapered off dramatically after the 25th case in the sequence, and subsequently equalled that of LHM+F. Length of stay was shorter for the POEM group (3.4 days vs 4.8 days, $p = 0.014$). The post-procedural findings favoured LHM+F, with the post-procedural Eckardt scores significantly lower (0.4 vs 1.6, $p < 0.001$) and the usage of PPIs lower in this group (20.7% vs 39.4%, $p = 0.03$).

CONCLUSION: POEM is challenging even for experienced endoscopists. From our data, complication rates between POEM and LHM+F equalize after approximately 25 POEMs.

Keywords: 3rd-space endoscopy, surgical endoscopy, surgical education, POEM

ARE ALL COLD SNARES THE SAME IN THE ERA OF COLD REVOLUTION?

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INTRODUCTION: The European Society of Gastrointestinal Endoscopy presently recommends cold snare polypectomy (CSP) as the preferred modality in resecting diminutive polyps (size ≤ 5 mm) and small polyps (6-9 mm), given its superior safety profile. Dedicated cold snares achieve these means of optimal CSP through their stiffer and thinner wire (0.30 mm) designs compared to traditional ones (0.47 mm), thus enabling cleaner cuts compared to tissue shearing resulting from thick wire snares. Despite the various cold snares available in the market, there are no direct comparison studies.

METHODS: We retrospectively analysed prospectively collected data on all resected polyps measuring ≤ 9 mm in our repository from February 2020 to June 2022. The cold snares used throughout the study duration were the Olympus SnareMaster Plus (10 mm) (hexagonal), STERIS Exacto[®] Cold Snare (shield), and Boston Captivator[™] Cold Single-use Snare (oval).

RESULTS: 714 diminutive and small colorectal polyps were cold resected with the Olympus SnareMaster Plus (n=236; diminutive n=174 and small n=62), STERIS Exacto (n=174; diminutive n= 114 and small n=60) and Boston Captivator Cold (n=304; diminutive n=248 and small n=56). There were seven episodes of prolonged post-polypectomy bleeding (lasting > 30 seconds) requiring endotherapy, for which 6 were a result of STERIS Exacto snares, whereas one was from the Boston Captivator. Our dataset revealed a bleeding complication rate of 0.009% with successful endoscopic therapy, while there were no cases of delayed bleeding, perforation, incomplete resection, and conversion to hot snaring.

DISCUSSION: Barring the unfortunate post-polypectomy bleeding, given individual patient circumstances and polyp characteristics, the three leading snares in the polypectomy market seem to share equal successes. Based on these observations, personal preference and device familiarity may play a role in snare selection as the effectiveness and low adverse events do not justify a distinction between them.

THE PI3K-INHIBITOR BUPARLISIB SUPPRESSED PROLIFERATION AND INDUCED APOPTOSIS IN COLITIS-ASSOCIATED CANCER MICE MODEL

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OBJECTIVE(S): Phosphatidylinositol-3-kinases (PI3K) signalling pathway plays a significant role in colorectal cancer as it involves in cell proliferation, apoptosis, cell cycle progression and inflammatory response. Inflammation-carcinogenesis pathway has previously demonstrated to play a role in promoting the development of long-standing ulcerative colitis into colitis-associated cancer (CAC). In this study, using an animal model of CAC, we assessed the role of PI3K-inhibitors in regulation of PI3K-non-AKT signalling pathway.

METHODOLOGY: Balb/c mice were used to create CAC model, which was subsequently treated orally with PI3K-inhibitor, Buparlisib (30mg/kg/daily) after a combination of azoxymethane injection and three cycles of 2.5% dextran sodium sulphate over the course of ten weeks. Disease activity index (DAI) were recorded every two days. For histological analysis, the harvested colon was stained with haematoxylin and eosin. Then, the examination of proliferative (Ki67) and apoptosis (Cleaved-caspase-3, CC3; ranging score 0-8) markers for immunohistochemistry were performed. QuantitativePCR on *PDK1* and *SGK2* were conducted.

RESULTS: The DAI score was found significantly higher in CAC-induced mice, confirming the successful mice model ($P < 0.05$). Buparlisib treatment significantly reduced the mean weight loss in CAC-induced mice ($2.0 \pm 0.0g$) as compared to the untreated CAC-group ($2.6 \pm 1.8g$) ($P < 0.05$). Histologically, presence of tumour and moderate inflammation were observed in 50% of CAC-induced mice. Buparlisib-treated CAC-induced mice reduced the proliferative Ki67-positive cells by 5% and had high score of CC3-intensity and -positive cells (6/8). Moreover, Buparlisib treatment also depicted down-regulation trend of *PDK1* and *SGK2* expression in CAC-induced mice by 0.32 and 0.28-fold, however, there were not statistically significant as compared to the Buparlisib-untreated group.

DISCUSSION AND CONCLUSION: Administration of PI3K inhibitor Buparlisib managed to minimise proliferative, escalate apoptotic activity and exhibit down-regulation trend in downstream non-AKT gene expression. Further investigation is highly warranted before Buparlisib can be fully recognized as a strong inhibitor in PI3K signalling pathway in colitis-associated cancer.

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PALM TOCOTRIENOL-RICH FRACTION SIGNIFICANTLY IMPROVE TRANSAMINASE LEVELS, HEPATIC STEATOSIS AND INFLAMMATION SCORES IN PATIENTS WITH METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE: A RETROSPECTIVE REAL-WORLD STUDY

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BACKGROUND/AIM: The role of tocotrienol in treating fatty liver is not widely explored. We aimed to investigate the potential benefit of palm tocotrienol-rich fraction (TRF) in patients with fatty liver disease.

METHODS: Patients were treated and followed up from February 2016 until September 2020. Inclusion criteria include ultrasound-diagnosed fatty liver, absence of excessive alcohol intake, and negative viral/autoimmune screening. All patients had been supplemented with palm TRF 50mg once daily, for a 6-month duration. A set of blood investigations that include transaminases, were taken before and after the supplementation. Additionally, steatosis, activity, and fibrosis scores were also calculated based on the algorithm developed by Fibronostics (LIVERFAST).

RESULTS: Out of 137 study patients, majority were Malays (43.8%), followed by Chinese (35%), and Indians (21.2%). There was a slight female predominance (51.1%), with mean age of 43 years (\pm 7.2). Majority were obese (BMI \geq 25: 93.4%), while 2.9% were overweight ($23 \leq$ BMI $<$ 25, n=4), and 3.6% had normal BMI ($18.5 \leq$ BMI $<$ 23, n=5). Proportion of patients with comorbidities were as follow: type 2 diabetes mellitus (n=64, 46.7%), dyslipidaemia (n=60, 43.8%), and hypertension (n=45, 32.8%). All patients were positively diagnosed with metabolic dysfunction-associated fatty liver disease. ALT and AST levels were significantly reduced after 6-month supplementation, with the mean reduction of 37.4 U/L (95% CI: 34.2 - 40.6) and 9.5 U/L (95% CI: 7.8 - 11.3), respectively (both p-values: 0.0001). In addition, significant improvement in hepatic steatosis and inflammation were observed, as shown by a reduction in the SteatoTest and ActiTest scores, 0.36 (95% CI: 0.34 - 0.38) and 0.19 (95% CI: 0.17 - 0.20), respectively (both p-values: 0.0001). One-third of patients with initial S3 (marked steatosis) had been downgraded to S0 (no steatosis) (n=40/125, 32%), with the majority had been downgraded to S1 (mild steatosis) (n=83, 66%). For patients who had initial mild inflammation (A1: n=129), nearly half of them demonstrated an improved grade (no inflammation) (A0: n=54, 42%), while the rest showed no change (A1: n=75, 58%).

CONCLUSIONS: Palm TRF has great potential in treating fatty liver patients with/without steatohepatitis. Randomized, placebo-controlled trials with different dosing regimens are in dire need.

EPIDEMIOLOGY, PSYCHOLOGICAL AND HEALTHCARE BURDEN OF IRRITABLE BOWEL SYNDROME: A CROSS-SECTIONAL STUDY

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OBJECTIVE: To evaluate the factors associated with irritable bowel syndrome (IBS) in a healthcare setting. Health-related quality of life (HRQOL) and healthcare utilization were additionally explored.

METHODS: A cross-sectional study of consecutive adults who visited primary care (IBS and non-FGID subjects) and secondary care (IBS subjects) in University Malaya Medical Centre were conducted. Sociodemographic data, psychological comorbidities (based on Hospital Anxiety Depression Score), HRQOL (based on EuroQol five-dimensional/ EQ-5D) and healthcare utilization were analyzed.

RESULTS: A total of 625 subjects (median age 32 years, 65.1% female, 87.8% Malay) were recruited between August 2019 to June 2023. Sixty-six subjects had IBS (diarrhea predominant: 54.5%, constipation predominant: 16.7%, mixed subtype: 12.1%). IBS subjects were younger (median age: 32 vs 37 years, $P<0.001$), while higher proportion of Chinese (25.8% vs 5.2%) and Indian ethnicity (18.2% vs 3.2%) ($P<0.001$) had IBS, compared to non-FGID subjects. Psychological comorbidities (anxiety and/ or depression) (42.4% vs 25.5% $p=0.004$), anxiety only (37.9% vs 21.3%, $p=0.002$) and depression only (24.2% vs 13.1%, $p=0.014$) were found to be associated with IBS, compared to non-FGID. On multivariate analysis, age (OR 1.04, 95%CI 1.02-1.06, $P=0.001$), psychological comorbidities (OR 1.82, 95%CI 1.01-3.29, $P=0.046$), Chinese (OR 4.74, 95% CI 2.01-11.19, $p<0.001$) and Indian (OR 5.36, 95%CI 2.10-13.70, $p<0.001$) ethnicity remained as independent predictors of IBS.

Compared to non-FGID, IBS subjects were 3 times more likely to seek unscheduled GP consultation for gastrointestinal (GI) related problems in a year (24.2% vs 8.2% $p<0.001$) and more likely to be on regular GI medication (16.7% vs 3% $p<0.001$). In addition, HRQOL appeared to significantly affect subjects with IBS, the mean EQ-5D utility score was lower among IBS than non-FGID subjects [0.796 (0.725-0.796) vs 0.848 (0.796-1.000), $p=0.009$].

CONCLUSIONS: IBS was independently associated with peculiar epidemiological factors, psychological comorbidities and had a detrimental effect on HRQOL and healthcare burden.

PREVALENCE OF INCREASED LIVER STIFFNESS MEASUREMENT (LSM) AND ITS ASSOCIATED FACTORS IN STABLE HEART FAILURE WITH REDUCED EJECTION FRACTION (HFrEF): A SINGLE-CENTRE STUDY FROM MALAYSIA

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INTRODUCTION: Heart failure (HF) carries a significant disease burden globally. Recurrent hepatic congestion is common in HF and patients are often asymptomatic. Hepatic dysfunction in HF has been not well-studied despite being closely related to poor long-term prognosis. This study aimed to measure the prevalence of increased liver stiffness measurement (LSM) using transient elastography (TE) in HF, and its associated factors.

METHOD: A single-centre cross-sectional study was conducted among HF patients with reduced ejection fraction (HFrEF) and a target sample size of 60 patients. All patients were subjected to TE, echocardiography and serum with N-terminal pro-brain natriuretic peptide (NT-proBNP) measurement in addition of routine demographic, clinical and biochemical evaluation.

RESULTS: The prevalence of increased LSM (>7.65kPa) in our cohort of 60 patients with stable HFrEF was 28.3%. Mean age (\pm SD) of the patients was 59.3 (\pm 10.38) years with majority of the patients being male gender (76.7%) and of Malay ethnicity (85%). Patients with increased LSM had significantly higher median (IQR) serum NT-proBNP levels; 2200 (1103.5-4925.0)pg/ml vs 491 (202-1400)pg/ml, $p=0.001$. The significant risk factors for increased LSM in patients with heart failure on univariate analysis were increased NT-proBNP [OR 1.0 (CI 1.000-1.001)], decreased tricuspid annulus plane systolic excursion (TAPSE) [OR 0.05 (CI 0.005-0.661)] and increased tricuspid regurgitation maximum pressure gradient (TRmaxPG) [OR 1.04 (CI 1.003-1.084)]. TAPSE was the only independent risk factor that remained associated with increased LSM after multivariate analysis [OR 0.05 (CI 0.004-0.604), (p -value=0.018)].

CONCLUSION: Prevalence of elevated LSM in stable HFrEF patients was 28.3%. NT-proBNP was significantly higher in those with elevated LSM. Decreased TAPSE was an independent risk factor for increased LSM in our cohort of HFrEF patients.

DIAGNOSTIC CHALLENGES OF ANTI-MITOCHONDRIAL ANTIBODY NEGATIVE PRIMARY BILIARY CHOLANGITIS IN NON TERTIARY CENTRE

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Primary Biliary Cholangitis (PBC) previously known as primary biliary cirrhosis is an autoimmune cholestatic liver disease that under recognize but important cause of chronic liver disease. Due to potential development of fibrosis and end stage liver cirrhosis, early diagnosis is paramount to ensure patient received appropriate treatment and prevent complications. We report a case of a middle-aged female with persistently elevated ALP activity and transaminitis. Initial workout was done shows anti mitochondrial antibodies (AMA) were not detected but M2-3E and AMA-M2 were detected using specific liver antibodies panel. Periportal Hepatitis with bile duct damage was observed in the liver biopsy. Patient was diagnosed with PBC as it fulfilled three out of the three diagnostic criteria. Treatment with Ursodeoxycholic acid was initiated and after several week of treatment shows marked improvement in biochemical level.

PRIMARY BILIARY CIRRHOSIS, AUTOIMMUNE HEPATITIS AND ITS OVERLAP SYNDROME - A DIAGNOSTIC DILEMMA; A CASE REPORT OF PRIMARY BILIARY CIRRHOSIS COMPLICATED BY AZATHIOPRINE INDUCED TOXICITY

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Primary biliary cirrhosis (PBC) and autoimmune hepatitis are two major immune mediated chronic liver disease. There is no major consensus to establish the diagnosis of PBC-autoimmune hepatitis overlapped syndrome and limited recommendation for the treatment hence it possesses a treatment dilemma to a treating physician. We report a case of 69-year-old female with no known medical illness and asymptomatic referred from a local health clinic for deranged liver enzymes predominantly showed obstructive features. An initial serological investigation showed features of mixed primary biliary cirrhosis and autoimmune hepatitis overlapped syndrome. A trial of azathioprine was initiated however worsened patient's liver enzymes marker. Treatment has been complicated with drug induced hepatitis. Final liver biopsy confirmed the diagnosis of primary biliary cirrhosis.

RECOGNITION OF AUTOIMMUNE HEPATITIS AND PRIMARY BILIARY CHOLANGITIS OVERLAP SYNDROME

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'Overlap syndrome' describes alternatives of autoimmune hepatitis (AIH) which present with features of AIH and primary biliary cholangitis (PBC) or primary sclerosing cholangitis (PSC). They are diagnosed based on clinical, biochemical, serological, histological parameters and cholangiographic findings. Additional to that, accurate diagnosis of overlap syndrome is medically notable to provide the accurate treatment for these patients. The remedy of overlap syndrome is immunosuppressive therapy combined with anticholestatic therapy with Ursodeoxycholic acid. However, as the disease progresses, patient might end up need liver transplantation. A case of 46-year-old female with underlying hypertension, history of myomectomy and dyslipidemia presented with itchininess and tea coloured urine since January 2019. Clinically no evidence of chronic liver disease. Her LFT showed transaminits with predominant raised in ALP and hyperbilirubinemia. AMA, Sp_100 and M2-3E (BPO) turned out to be positive. The diagnosis confirmed by liver biopsy.

IMPACT OF FUNCTIONAL DYSPESIA IN PRIMARY VERSUS SECONDARY CARE: A CROSSECTIONAL STUDY

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BACKGROUND: Functional dyspepsia (FD) is recognised to contribute to an increased healthcare burden and impairment of quality of life. However, the differences on the impact of FD in primary care and secondary care has not been explored.

METHODS: A cross-sectional study of consecutive adults who visited primary care [FD and non-functional gastrointestinal disorder (non-FGID) subjects] and secondary care (FD subjects) in University Malaya Medical Centre were conducted. Sociodemographic data, psychological comorbidities based on Hospital Anxiety Depression Score (HADS), and healthcare utilization were analysed. The differences between primary and secondary care were additionally explored.

RESULTS: A total of 638 subjects (median age 32 years, female 66.9%, Malay 87.3%) recruited between August 2019 to June 2022. Eighty subjects were diagnosed with FD [primary care: 41, secondary care: 39; postprandial distress syndrome (PDS): 72.5%, epigastric pain syndrome (EPS): 12.5%, overlap PDS/EPS: 15.0%] and 558 subjects were non-FGID. Compared to non-FGID, FD subjects mostly had either normal BMI (45.0% vs 23.1%) or underweight (12.5% vs 3.6%, $p<0.001$), and were more likely to have psychological comorbidities (anxiety and/or depression) (37.5% vs 25.2%, $p=0.019$), in particular anxiety (31.3% vs 21.15, $p=0.043$).

Overall, FD subjects had increased healthcare utilization than non-FGID subjects, with five times more rate of unscheduled gastrointestinal (GI) consultation at least once a year (41.3% vs 8.2%, $p<0.001$) and nine times more use of regular GI medications (27.5% vs 3%, $p<0.001$).

More interestingly, this study showed that comparing FD subjects between primary and secondary healthcare settings, the latter group has more overlap PDS/EPS subtype (25.6% vs 4.9%, $p=0.030$), and more healthcare burden reflected by greater proportion of unscheduled GI consultation (64.1% vs 19.5%, $p<0.001$) and regular GI medications (48.7% vs 7.3%, $p<0.001$).

CONCLUSION: FD, compared to non-FGID, had significant impact on healthcare burden, particularly in the secondary healthcare setting, and overall increased psychological comorbidities.

AMOEBIC COLITIS IN STEROID-TREATED COVID-19 PNEUMONIA: A CASE REPORT

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INTRODUCTION: Amoebiasis is a parasitic infection afflicting communities of lower socioeconomic statuses and native communities¹. Globally, amoebic colitis is the second leading cause of parasitic deaths. Acute manifestation of dysentery or liver abscess has been reported among immunosuppressed individuals in case series.

CASE: Here we report the case of a 63 years old Siamese male rubber tapper diagnosed with Covid-19 pneumonia complicated with myocardial infarction requiring intensive care (ICU) and 10 days of dexamethasone. He developed abdominal distension with bilious aspirate on nasogastric tube with worsening sepsis biochemically and renal impairment. He further experienced haematochezia with more than 2g/dL drop in haemoglobin necessitating a colonoscopy which showed inflamed mucosa from rectum till caecum and multiple superficial ulcers with slough. Despite intravenous Piperacillin-Tazobactam and completion of Covid-19 treatment, he deteriorated and succumbed to sepsis. Posthumously histopathology examination (HPE) of colon biopsies showed presence of many amoebic trophozoites within ulcer exudates displaying red blood cell ingestions staining positive for Periodic Acid-Schiff stain.

DISCUSSION: Based on the presence of red blood cell ingestions in the HPE and the severity of ulceration, *Entamoeba histolytica* is the likely causative organism in our case. Amoebic colitis has been reported in case reports following Covid-19 pneumonia and corticosteroid use.^{1,2} We suspect that corticosteroid use could have precipitated previously asymptomatic amoebic colitis resulting in acute presentation of gastrointestinal symptoms as described in past systematic reviews.³ As such, a high index of suspicion for amoebiasis is warranted in patients presenting with colitis symptoms or lower gastrointestinal bleeding with recent corticosteroid therapy.

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THE TRIALOGUE BETWEEN RISK PERCEPTION, LIFESTYLE AND GUT DYSBIOSIS IN POST-GESTATIONAL DIABETES WOMEN: A FRONTIER IN PREVENTIVE STRATEGY

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OBJECTIVES: Poor-risk perception is associated with a sedentary postpartum lifestyle and persistent glucose intolerance (GI) among women with a previous history of gestational diabetes mellitus (GDM). Interestingly, gut dysbiosis is also acknowledged as a risk factor for GI. This study aimed to explore the link between risk perception, lifestyle, gut microbiota composition and metabolic outcomes in post-GDM women.

METHODOLOGY: At three to six months after giving birth, 24 post-GDM women had their risk perception, three-day dietary records, physical activities, anthropometric measures, biochemical tests and gut microbiota profiles analysed. Using 16S sequencing, the top 30 baseline species-level gut microbiota compositions were acquired. Pearson's correlation coefficient analysis was then applied to connect these species-level data with risk perception, food intakes, physical activity and metabolic outcomes.

RESULTS: Several gut microbiota species had shown significant moderate correlations with risk perception, dietary intakes, physical activities and metabolic outcomes ($0.5 \geq r \leq 0.7$). *Clostridium hiranonis* was positively correlated with personal control ($r = 0.501$; $p = 0.013$), good believe in preventive behaviour ($r = 0.646$; $p = 0.001$), dietary fibre intake ($r = 0.587$; $p = 0.002$) and negatively correlated with physical activities at the workplace ($r = -0.667$; $p < 0.001$). *Bifidobacterium bifidum* was negatively correlated with sucrose intake ($r = -0.612$; $p = 0.001$). *Bacteroides coprocola* was negatively correlated with two-hour postprandial glucose (2HPP) ($r = -0.602$; $p = 0.002$), waist circumference ($r = -0.506$; $p = 0.012$) and HbA1c ($r = -0.509$; $p = 0.011$). *Escherichia coli* was positively correlated with optimistic bias ($r = 0.630$; $p = 0.001$).

DISCUSSIONS AND CONCLUSIONS: Poor-risk perception and an unhealthy diet are significantly associated with gut dysbiosis, waist circumference and GI in post-GDM women. Hence, improvement in risk perception and dietary intervention is essential to restore healthy gut microbiota and prevent GI in post-GDM women.

PROBIOTICS MAY HAVE CONTRIBUTED TO THE EXPRESSION CHANGE OF INTESTINAL MUCOSAL INFLAMMATORY CYTOKINES AND INTESTINAL PERMEABILITY BIOMARKERS IN NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) PATIENTS - A RANDOMIZED CONTROLLED TRIAL

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OBJECTIVES: Dysbiosis that caused malfunction of the gut-liver axis resulted in impaired intestinal permeability and an increment of secretion of intestinal mucosal inflammatory cytokines. This study aimed to evaluate the expression change of zonulin and zona occludens-1 (ZO-1) in serum samples, as well as TNF- α , IFN- γ and IL-6 in duodenal mucosa of NALD patients after supplementation with probiotics.

SUBJECTS AND METHODS: Twenty NAFLD patients were randomized into probiotics and placebo groups. 30 billion CFU of multi-strain probiotics containing six different *Lactobacillus* and *Bifidobacterium* species were given. Oesophagogastroduodenoscopy and blood collection were performed at baseline and post-intervention, to obtain the duodenal biopsies and serum samples. Using qPCR and ELISA, the levels of inflammatory cytokines and proteins related to intestinal permeability were analysed.

RESULTS: The mean age of patients was 52 ± 13 years with a mean BMI of 28.2 ± 4.1 . ELISA analysis showed a significant increase of circulating zonulin for both probiotics and placebo groups (probiotics: $107.6 \text{ ng/mL} \pm 124.7$, $p=0.005$ vs. placebo: $106.9 \text{ ng/mL} \pm 101.3$, $p=0.0002$). Meanwhile, ZO-1 conversely disclosed a significant reduction of expression for both groups (probiotics: $-34.51 \text{ ng/mL} \pm 18.38$, $p<0.0001$ vs. placebo: $-33.34 \text{ ng/mL} \pm 16.62$, $p=0.0001$). Next, qPCR analysis revealed a significant reduction of IFN- γ (-7.9 ± 0.44 , $p<0.0001$) and TNF- α (-0.96 ± 0.25 , $p<0.0033$) after six months supplementation of probiotics. IL-6 on the other hand exhibited a different pattern, which was a significant increase in expression (12.79 ± 2.24 , $p<0.0001$) in the same group.

CONCLUSION(S): With supplementation of probiotics, the levels of intestinal mucosal inflammatory cytokines in NAFLD patients appear to reduce over some time. The probiotic strains may have exerted effects on gut microbiota composition, which potentially reduces the inflammation. Although we failed to demonstrate significant positive change in intestinal barrier function post probiotics supplementation, probiotics might have a complementary role with a longer-term duration of the study with bigger sample sizes and fresh sample collections.

PRIMARY HEPATIC LYMPHOMA - A RARE DISEASE

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Primary hepatic lymphoma (PHL) is a subtype of diffuse large B-cell lymphoma (DLBCL) confined to the liver without evidence of involvement of the spleen, lymph nodes or other lymphoid structures. This entity is a rare disease and constitutes 0.4% of all cases of extranodal non-Hodgkin lymphoma and only 0.016% of cases of Non-Hodgkin lymphoma. The mean age of occurrence of PHL is 50 years with males being more prone to develop PHL compared to females (1.7 to 1.0). A 25 years old lady presented with 4 months history of vague abdominal pain and swelling. Physical examinations revealed a huge tender irregular mass at the right upper abdomen. Blood investigations were unremarkable with normal liver function test, negative for viral profile and normal Alpha-fetoprotein. Initial sonographic imaging revealed heterogenous mass arising from liver measuring 10 x 11 x 15 cm. Liver was not cirrhotic and no other focal lesions were seen. Subsequent 4-phase computed tomographic confirmed the presence of lobulated liver mass with no other lesions suggestive of possible focal nodular hyperplasia with differentials of atypical HCC. MRI Primovist revealed large arterially enhancing mass involving segment V, VII and I suggestive of fibrolamellar type of HCC. She underwent right hepatectomy with excision of the tumour and biliary reconstruction. On immunohistochemistry, cells were positive for cluster of CD20+, CD10+, BCL6+, BCL2+, Pax5+ and Mum1-. Reactive T CD3+ lymphoid cells are also seen with tumours seen at the resected margin. High-grade B cell lymphoma was diagnosed. She had an uneventful recovery and was subsequently referred to haematology for chemotherapy. Repeated imaging after a few cycles of chemotherapy showed no evidence of recurrence or residual disease. In conclusion, PHL should be considered among the differentials of space-occupying liver lesions despite its rarity, especially in the younger female gender.

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CONSUMPTION - A RARE CASE OF PRIMARY PANCREATIC TB

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Consumption is a colloquial term of yester-years describing Tuberculosis as patients would be severely malnourished giving the appearance of being 'consumed' by the disease. We present a case of a primary Pancreatic TB (PPTB) in an obese gentleman.

Tuberculosis (TB), caused by the bacteria Mycobacterium Tuberculosis a preventable and curable disease that affects the immuno-competent and immune-compromised. It is the 13th leading cause of death world-wide in 2020. PPTB is reported to occur of up to 4.7% of cases.

We report a case of a gentleman with a BMI of 37 kg/m², no prior comorbidities who presents with lower back pain, dysuria and unresolved fever for 5 weeks. He tried several courses of antibiotics last being Ciprofloxacin/Tetracycline a week prior to admission. In the ward, he had daily spiking fever of 38°C and complained of severe back pain requiring regular doses of Tramadol. He had mild leucocytosis with raised Erythrocyte Sedimentation Rate (ESR) and C-reactive protein. Given the history of traditional medication usage, a morning cortisol was sent which was low. Multiple blood/urine/sputum cultures, echocardiography was done had no positive yield.

RESULTS:

- CT Thorax/Abdomen/Pelvis (TAP) showed enlarged necrotic lymph nodes at the celiac region with multiple small hypo-dense lesions in the pancreas.
- Endoscopic Ultrasound (EUS) had similar findings and noted multiple small hypo-echoic lesions in the body and tail of the pancreas. Fine Needle Aspiration (FNA) of the celiac node was consistent with tuberculosis.

Patient was started on anti-Tb treatment and hydrocortisone replacement and was discharged well.

CONCLUSION: PPTB is a rare presentation of TB and although uncommon, TB does present in patients with a high BMI. Prompt and proper diagnosis is crucial for a successful treatment.

EXPLORING COLONIC MUCOSAL MICROBIOTA POPULATION IN EARLY-ONSET COLORECTAL CANCER

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INTRODUCTION: Colorectal cancer (CRC) cases have been rising in practically all nations among persons aged 50 and under. Early-onset (≤ 50 years old) appears to be more aggressive than late-onset (>50 years old) CRC. Gut microbiota has been linked to the progression of early-onset CRC. However, there is so far limited data on its relation to the early-onset colorectal cancer in Malaysia. The goal of this study was to determine microbial composition in early-onset and late-onset adenoma, colorectal cancer with matched control.

METHODOLOGY: Immunohistochemistry (IHC) staining of *BRAF* were performed on 20 early-onset CRC, formalin-fixed paraffin-embedded (FFPE) tissue blocks. A total of 55 fresh tissue samples consisting of early-onset CRC (n=13), late-onset CRC (n=11), early-onset polyp (n=8), late-onset polyp (n=11), and control (n=12) were collected. DNA were extracted from these samples and were sent for 16S rRNA sequencing.

RESULT: Three (15%) early-onset CRC patients with *BRAF* IHC positivity had positive cytoplasmic staining. When compared to healthy groups, beta diversity exhibited a significant difference ($p < 0.001$) in diseased groups. Microbiome analysis revealed increased numbers of genera *Bacteroides*, *Fusobacterium*, *Parvimonas*, and decreased numbers of *Lachnospiraceae* and *Faecalibacterium*, in both early-onset, late-onset adenoma, and CRC in comparison to normal. Furthermore, *Peptostreptococcus* in particular was more prevalent in both early-onset adenoma and CRC samples.

DISCUSSION: Our findings on *BRAF* mutation prevalence is correlated with earlier CRC data (8%-12%). A decrease in *Lachnospiraceae* and *Faecalibacterium* (Gram-positive) may cause less butyrate generation in the gut, which may aid in the onset of colorectal cancer. Gram-negative anaerobic bacteria *Bacteroides* and *Fusobacterium*, as well as Gram-positive anaerobic bacteria *Parvimonas* and *Peptostreptococcus*, can promote gut inflammation, generate cancer-associated metabolites and trigger oncogenic signalling pathways. The relationship between nutrition, genetics, lifestyle, and gut dysbiosis as probable causes of the rising trend of early-onset CRC will be investigated in future research.

REGULATION OF INTESTINAL BARRIER FUNCTION GENES IN INFLAMMATORY BOWEL DISEASE TREATED WITH VEDOLIZUMAB

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OBJECTIVE: Inflammatory bowel disease (IBD) is currently treated with a novel treatment using anti-integrin therapy. Vedolizumab (VDZ), a humanized monoclonal IgG1 antibody against $\alpha 4\beta 7$ -integrin prevents leukocyte adhesion to the endothelium. Many IBD patients are currently receiving intensive VDZ therapy, although some of them show little therapeutic benefit. The high percentage of VDZ therapy resistance may be brought on by intestinal barrier dysfunction. Therefore, the aim of this study is to investigate the regulation of genes related to intestinal barrier function in IBD patients treated with VDZ.

METHODOLOGY: RNA was extracted from twenty nine colonic biopsies (n=15 IBD prior to the treatment; n=4 for each responder and non-responder IBD post-VDZ treatment. Control was obtained from normal colorectal mucosa (n=10) using the RNeasy Mini kit. The cDNA was amplified by qPCR using QuantiNova SYBR Green PCR kit for Mucin 1 (*MUC1*), Claudin 8 (*CLDN8*), and Occludin (*OCLN*). The 60.0°C reaction gave the lowest Cq value and was selected as the annealing temperature for this qPCR assay.

RESULTS: Demographic data for all samples were as follows: median age of 34 (IQR:25.5) years old. Majority of the samples were Malays (57.1%), with slightly higher proportion among men (57%) compared to women (43%). *CLDN8* and *MUC1* expression for responder to VDZ has shown to be significantly up-regulated by 5.94 and 1.15-fold respectively as compared to control ($p < 0.05$), while expression levels of *OCLN* were significantly down-regulated by 0.42-fold as compared to control ($p < 0.05$). Nevertheless, *OCLN* and *MUC1* expression for non-responder to VDZ has shown to be significantly upregulated by 7.19 and 2.22-fold respectively as compared to control ($p < 0.05$), while *CLDN8* expression were significantly downregulated by 0.18-fold as compared to control ($p < 0.05$).

DISCUSSION AND CONCLUSION: These findings indicated that *OCLN* may have a role in the aetiology of IBD. This may offer a new perspective on the expression of intestinal barrier genes and the significance of restoring mucosal barrier function. A thorough framework of the gut barrier function will be provided by additional validation employing barrier assay.

SMALL PANCREATIC INSULINOMA DETECTED ONLY BY ENDOSCOPIC ULTRASOUND

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INTRODUCTION: Insulinomas are a type of pancreatic neuroendocrine tumour (pNET) that arises from pancreatic endocrine tissue. They are rare, with an estimated incidence of 4 cases per 1 million person-years.

CASE PRESENTATION: This study reports on a 59-year-old male that presented with frequent dizziness and sweating for the past one year. His symptom will always improve after food consumption. Initial laboratory testing revealed blood glucose level ranging 1.9 - 4.6 mmol/L. Other blood results include high serum C-peptide at 1.6 ng/ml (>0.6 ng/ml) as well as high insulin level at 6.5 pmol/L (>3 pmol/L). Contrasted abdominal CT scan followed by Ga - 68 DOTATATE PET-CT scan were unable to reveal any abnormality. Endoscopic ultrasound (EUS) revealed a hypoechoic, well-circumscribed, homogenous lesion around 12 X 10 mm in size located at the neck of pancreas with perilesional vascular network. The other parts of pancreas were normal. Both pancreatic and common bile duct were not dilated. Three passes of Fine-needle biopsy (FNB) were performed using 22G FNB needle over the pancreatic neck lesion. Histopathological examination was suggestive of pNET, likely Insulinoma. Patient was then referred to the surgical team for tumour enucleation.

CONCLUSION: EUS has been regarded as one of the most accurate methods for the detection of pancreatic focal lesions, especially in patients with small lesion of 2 cm or less. While typically larger pNETs are detectable using conventional imaging studies such as CT, MRI or somatostatin-receptor based imaging, e.g Ga - 68 DOTATATE PET-CT, insulinomas may be missed due to smaller in size and also express relatively scant level of somatostatin receptors type 2 (SSTR2).

BETA BLOCKER UTILISATION IN AN ADULT ENDOSCOPIC VARICEAL SURVEILLANCE PROGRAM: A SINGLE CENTRE 8-YEAR EXPERIENCE

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INTRODUCTION: Guidelines have established the use of beta blocker pharmacotherapy for the prophylaxis of variceal bleeding. However, Asian adults are recognised to have a poor tolerance to beta-blockers and their compliance to therapy is relatively unknown.

OBJECTIVES: To report dosing and compliance with beta blocker use amongst Malaysian adult patients with oesophageal varices.

METHODS AND MATERIALS: A retrospective review of the electronic medical records of this institution was conducted. The inclusion criteria were adult cirrhotic patients >18 years old who underwent outpatient OGDS for variceal surveillance from 1st January 2014 - 31st December 2021. Data was analysed using SPSS.

RESULTS: Data for 895 cirrhotic patients who underwent endoscopic variceal surveillance was available. They were predominantly male (61.5%), of Chinese (41.9%) ethnicity and had NASH (25.8%) as the most commonly aetiology of cirrhosis. Oesophageal varices were present in 710 (79.2%) patients and 650 (94.1%) patients were prescribed with beta blockers. Sixty patients were contra-indicated for beta blocker therapy, mainly due to having asthma or hypotension. Fifty patients who were initially prescribed with propranolol had to discontinue for the following reasons: obstructive airway disease (10%), hepatic decompensation (14%), acute kidney injury (14%) and switched to carvedilol (20%). In total, 110 (60 initial + 50 subsequently) patients (15.5%) were not suitable for beta blockers in this study. A further 233 (39.5%) patients were on a maintenance dose of propranolol 20mg bd or less; which is sub-therapeutic. In short, 333 (48.3%) cirrhotic patients were not adequately pharmacologically treated for portal hypertension.

CONCLUSION: The utilisation of beta-blockers for variceal bleeding prophylaxis in Malaysian adult patients is sub-optimal. Further study is required to explore and understand the poor utilisation of beta-blockers amongst these patients.

BOTTLE GOURD POISONING MIMICKING AN ACUTE ABDOMEN: A CASE REPORT

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BACKGROUND: An acute abdomen can pose a diagnostic challenge. Symptoms of bottle gourd poisoning include severe abdominal pain, vomiting, diarrhoea and occasionally, GI bleeding (1).

METHODS: We report a case of bottle gourd poisoning mimicking an acute abdomen of a 62-year-old man with stable IHD, DM and hypertension

RESULTS: Mr R.T. presented with sudden multiple episodes of vomiting, hematemesis, profuse diarrhea, hematochezia and generalized abdominal pain. He admitted to consuming bottle gourd juice for 1 month and described it being particularly more bitter than usual that day.

He was hemodynamically unstable, severely dehydrated, tachypneic, had generalized tenderness and guarding . DRE revealed hematochezia. Investigations revealed hepatocellular liver injury, acute kidney injury and severe lactic acidosis. Other investigations were normal. He was commenced on IV fluids, broad spectrum antibiotics, vasopressors and PPI. CTA abdomen was normal.

His deteriorating condition necessitated intubation, ICU admission and HD support, following which he subsequently improved. His liver function also improved. He was successfully extubated and discharged within 1 week.

DISCUSSION: The toxic effects of bottle gourd is due to a cytotoxic compound called cucurbitacine, which gives it a bitter taste. Symptoms of poisoning have been reported to occur rapidly, from minutes to days after consumption. There is no antidote and management includes prompt resuscitation and organ support.

CONCLUSION: We aim to highlight bottle gourd poisoning as a potential cause of acute GI toxicity. It is not only important to create awareness to avoid delay in identifying the correct diagnosis and management but also on the potential harm of bottle gourd ingestion.

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LIVER INJURY IN HOSPITALISED PATIENT WITH COVID-19 INFECTION: A SINGLE CENTRE STUDY

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INTRODUCTION: Liver injury is a common complication in COVID-19 infection. In a systematic review conducted in September 2020, the cumulative prevalence of acute liver injury was estimated at 23.7 (16.2-33.1) per 100 patients with COVID-19. Our study aimed to describe the pattern of liver injury and the incidence of mortality among COVID-19 patients with liver injury.

METHODOLOGY: A retrospective cohort study of COVID-19 patients with liver injury admitted to Tengku Ampuan Rahimah Hospital, Klang (HTAR) between 1st January 2021 and 30th June 2021 was done. Universal sampling was done to recruit patients who tested positive for COVID-19 with either reverse-transcriptase-polymerase chain reaction (RT-PCR) or rapid test kit (RTK-Antigen Test), were above 12 years of age, and had at least one of the following biochemical derangement: Elevated ALT, AST, ALP or total bilirubin more than 1 time upper limit normal. Those who were transferred or sent to other medical facilities for continuation of management were excluded. Individual case data were obtained from the hospital laboratory web portal and patient medical records.

RESULTS: It was found that 57 out of 271 (21.0%) COVID-19 patients with liver injury died during hospitalisation. Age, number of comorbidities, COVID category, presence of additional medication, presence of ventilatory support, admission to ICU and the presence of acute complications were found to be significantly associated to the survival of patients with liver injury during hospitalisation. Among those who survived, 20.6% had hepatocellular, 33.6% had cholestatic and 45.8% had mixed pattern of liver injury. There was no significant association between pattern of liver injury and mortality, as a similar distribution of liver injury pattern was noted among those who died (19.3% hepatocellular, 45.6% cholestatic, 35.1% mixed). 6 patients had chronic liver disease (CLD), out of which half of them survived with majority having complications, even though CLD was not significantly associated with mortality.

CONCLUSION: The results suggest that pattern of liver injury and the presence of CLD does not affect mortality, and that proactive measures need to be taken to strengthen acute medical treatment for COVID-19 patients with liver injury to improve survival rates.

Keywords: COVID-19, Liver injury, Mortality

NOVEL NARROW-BAND IMAGING DESCRIPTION OF RECTAL NEUROENDOCRINE TUMORS - THE TREE-ON-SUNSET APPEARANCE

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INTRODUCTION: The worldwide incidence of rectal neuroendocrine tumours (NETs) has steadily grown owing to increasing screening colonoscopies. By character, rectal NETs are subepithelial lesions with normal overlying mucosa. Recently, the employment of narrow-band imaging (NBI) with high magnification resulted in an interesting observation of the mucosal appearance of rectal NETs. Nevertheless, the utility and description of NBI remain limited, and a formal approach has yet to be defined. We wish to expand on previous NBI observations and report a distinct finding in our case.

CASE DESCRIPTION: A 62-year-old lady with underlying functional dyspepsia and irritable bowel syndrome came for her scheduled endoscopic procedures. Her colonoscopy demonstrated a 10 mm yellowish subepithelial lesion in the lower rectum, for which characterization with NBI revealed fine capillaries traversing across the centre of the polyp resembling a tree-on-sunset appearance. Biopsies were positive for features of rectal NETs. Rectal endoscopic ultrasound delineated the lesion within the submucosal space, measuring 10.2 mm by 5.1 mm in size. Subsequently, we performed an en bloc endoscopic mucosal resection with the ligating device in the same setting. The final histology revealed Grade 1 rectal NETs with a Ki-67 proliferative index of <3%, and the resection margins were clear from neoplastic tissue, deeming the endoscopic treatment curative.

CONCLUSION: Adding a unique NBI feature for rectal NETs could better address the detection and characterization of subepithelial lesions manifesting with diagnostic difficulty. It can also serve as an accurate navigating tool for endoscopists to focus on suspicious tumours and acquire biopsies with better precision. Minimizing improper biopsies helps prevent lesion blurring and the inherent issue of submucosal fibrosis that can lead to suboptimal endoscopic resection. We trust that the tree-on-sunset appearance can complement and improve on previous observations.

A RARE CASE REPORT OF DUODENAL HISTOPLASMOSIS

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INTRODUCTION: Duodenal histoplasmosis is a rarely encountered entity in severely immunocompromised patients afflicted with gastrointestinal (GI) histoplasmosis. Present evidence demonstrates a prevalence of <4% within the duodenum, with most lesions found within the ileocecal region and colorectum. Various endoscopic morphology described included ulcers, strictures, polypoidal, and inflammatory lesions. These findings are non-specific and manifest as a mimicker to other GI pathology. In a recent case, we characterized the duodenal lesion with narrow-band imaging (NBI) and described our endoscopic findings.

CASE DESCRIPTION: A 46-year-old gentleman with advanced AIDS presented with a three-month duration of generalized abdominal pain, weight loss, and melena. Relevant blood investigations revealed significant anaemia. Gastroscopy demonstrated multiple flat and sessile lesions measuring 8-13 mm straddling multiple duodenal folds (Figure 1). NBI characterization displayed regular engorged villi with surrounding whitish deposits (Figure 2). Targeted biopsies revealed diffuse lymphohistiocytic infiltration with the presence of intracellular fungal organisms following Grocott methenamine silver (GMS) staining in keeping with histoplasmosis (Figures 3 and 4).

DISCUSSION: We discovered that interrogation with NBI improved lesion demarcation, which helps optimize targeted biopsies. The regular and engorged microsurface patterns on the lesion, when extrapolated from more established gastric NBI findings, could be interpreted as non-dysplastic in origin. Whether there is a role for NBI in distinguishing benign duodenal GI lesions from duodenal adenomas would require further research. The field of endocytoscopy, a combination of ultra-high magnification endoscopic technique and histology, is rife with potential promise, with the possibility of obtaining a real-time diagnosis in the future that may transform our current endoscopic practices. Until then, there is no replacement for good clinical judgment, thorough endoscopic examination, and obtaining biopsies.

DEMOGRAPHICS OF COLORECTAL CANCER IN SABAH DURING THE COVID-19 PANDEMIC - CAN NBI IMPROVE DIAGNOSTIC YIELD TO REDUCE SCOPE BURDEN?

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INTRODUCTION: According to GLOBOCAN 2020, colorectal cancer (CRC) is the second most diagnosed malignancy in men (15.4%) and women (11.9%) in Malaysia. Around 2/3 of the cases present late during colonoscopy for CRC screening. Obtaining biopsies remains the gold standard in arriving at a definitive diagnosis but is occasionally limited by inadequate and improper sampling. This problem results in further delays and inconvenience to patients as a repeat colonoscopy with biopsies is warranted. Thus, we aim to evaluate the role of narrow-band imaging (NBI) in guiding targeted biopsies to mitigate the frequency of repeated procedures.

METHODOLOGY: We performed a retrospective analysis of prospectively collected data on all CRC cases in our repository from February 2020 to June 2022.

RESULTS: There were 89 CRC cases throughout the study duration. Of these, 46 lesions were diagnosed through biopsies on white light by non-NBI users, for which 14 had to be repeated for more biopsies to justify operative intervention. The remaining 43 lesions were diagnosed through NBI-guided biopsies, for which only 3 cases required a repeated attempt (positive yield for non-NBI vs. NBI-guided biopsies: 69.56% vs. 93.02%; Odds Ratio 5.83, 95% Confidence Interval 1.542-22.07, $p = 0.009$).

DISCUSSION: Our proof-of-concept study demonstrates better biopsy yield by up to six times using NBI compared to white light. The limitation, however, is the small sample size reflected in the confidence intervals. Nevertheless, looking at our prospective data, there is a frequent recurring trend for repeat procedures in the non-NBI arm owing to poor yield. Future considerations for prospective studies should account for potential confounders such as endoscopists' experience, bowel preparation, and tumor morphology that may alter or support the outcome of our results.

LESSONS LEARNT FROM THE STRUGGLES AND CHALLENGES IN INTRODUCING ENDOSCOPIC SUBMUCOSAL DISSECTION DURING THE COVID-19 PANDEMIC

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INTRODUCTION: Endoscopic submucosal dissection (ESD), introduced in 1988, has undergone various technical refinements and witnessed the birth of innovative endoscopic accessories to improve procedural success and patient outcomes. Its recommended indications for superficial gastrointestinal neoplasms, regardless of size and morphology, permit an opportunity for non-operative curative resection with minimal complications. However, it remains a technically demanding and laborious procedure with a long learning curve requiring intensive training and consistent efforts. We recently ventured into ESD after possessing a sufficient volume of endoscopic mucosal resection (EMR) for complex lesions and are in touch with experts in the field for ongoing updates.

METHODOLOGY: We analysed a case series of twelve lesions (January 2020 to June 2022) requiring ESD of the gastrointestinal tract for various indications. (Table 1). The DualKnife J (KD-655L and KD 655U, Olympus Medical Systems Corp.) was the endoscopic knife of choice, and the electrosurgical unit in our centre was the ERBE VIO 200D (Tübingen, Germany). We explored and reported on our cases' endoscopic outcomes, complications and histological clearance (see Table 1).

RESULTS:

Table 1: Case series of 12 patients undergoing ESD for various indications. NET: neuroendocrine tumour, TA: tubular adenoma, ND: non-dysplastic, LGD: low-grade adenoma, HGD: high-grade adenoma, IMC: intramucosal cancer, SMI: submucosal invasion, TSA: traditional serrated adenoma, SSA: sessile serated adenoma, LST-G-NM: laterally-spreading tumor granular, nodular mixed

No	Age	Sex	Site	Indication	Size (mm), Morphology	Procedural duration (mins)	Complications and outcome	Histology
1	73	F	Gastric corpus (greater curvature)	Gastric NET	15, Paris IIb	30	No, discharged following day	Histology: G1 NET, complete resection

No	Age	Sex	Site	Indication	Size (mm), Morphology	Procedural duration (mins)	Complications and outcome	Histology
2	76	F	Posterior antrum	Dysplastic lesion (HGD)	55, Paris Is + IIa	45	Delayed bleeding tackled endoscopically	Histology: TA HGD, complete resection
3	70	F	Gastric corpus (anterior)	Dysplastic lesion (HGD)	40, Paris IIa	45	No, discharged following day	Histology: TA HGD, complete resection
4	51	M	Descending colon	Failed conventional resection (broad, short stalk)	50, Paris Isp	15	No, daycare	Histology: TSA ND, complete resection
5	66	M	Sigmoid colon	Failed conventional resection (broad, short stalk)	20, Paris Ip	10	No, daycare	Histology: TVA HGD with IMC, complete resection
6	67	M	Sigmoid colon	Features of JNET 2B	50, Paris Is	55	No, discharged following day	Histology: TVA with superficial SMI cancer, R0 resection
7	60	F	Sigmoid colon	Features of JNET 2B	18, Paris Ip	12	No, discharged following day	Histology: SSA LGD, complete resection
8	52	M	Ascending colon	Failure to lift, unable to resect with conventional methods	25, Paris IIb	15	No, discharged following day	Histology: SSA LGD, complete resection

No	Age	Sex	Site	Indication	Size (mm), Morphology	Procedural duration (mins)	Complications and outcome	Histology
9	62	M	Sigmoid colon	Failed conventional resection (broad, short stalk)	35, Paris Isp	30	No, daycare	Histology: TVA LGD and foci of HGD, complete resection
10	63	F	Sigmoid colon	Previous resection attempts, significant fibrosis	35, Paris IIa	15	Procedure abandoned, unable to dissect with significant fibrosis and tattoo placement on lesion	Histology from surgery: SSA ND
11	76	M	Ascending colon	Poor access for conventional methods	20, Paris Is	30	No, daycare	Histology: SSA LGD, complete resection
12	82	F	Rectum	Suspicion for covert cancer	120, LST-G-NM	270	Perforation, treated endoscopically and conservative management	Histology: TSA LGD, planned for staged resection

DISCUSSION: The outcome of our case series was generally good, with manageable complications through endoscopic intervention. Following a ‘scouting’ scope with optical biopsies to gather information about the lesion and strategise a plan for resection, we then engage the relevant surgical subspecialties to support us should we encounter complications. When there is a need, we will perform additional tests to ensure no local or distant spread of the primary tumour before venturing into resection. The main drawback, however, is the lack of cases to maintain consistent performance during the pandemic. Nevertheless, this issue is mitigated by the kind support from our surgical counterparts, senior endoscopists and experienced assistants. Moreover, our centre possesses state-of-the-art equipment, endoscopy accessories and ancillary tools to optimise interventional outcomes and ensure patient safety.

A RARE CASE OF GANODERMA LUCIDUM (LINGZHI)-RELATED CHOLESTATIC LIVER INJURY - A CASE REPORT

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INTRODUCTION: Drug-induced liver injury (DILI) poses a tremendous diagnostic challenge for physicians owing to the vast array of medications used in clinical practice. In addition, clinicians must also be aware of the recent increase in the consumption of herbal medicines and dietary supplements (HDS), which can be equally hepatotoxic and portends the risk of acute liver failure.

CASE PRESENTATION: We recently encountered a 19-year-old man who presented with painless jaundice, tea-coloured urine and pale stools for one week. There was a significant, intentional weight loss of 20 kg six months before his presentation. He denied taking any medications or health supplements. Clinical examination was unremarkable, while notable blood investigations revealed findings supportive of cholestatic liver injury. Extensive second-line biochemical and radiological workup was normal. Liver biopsy demonstrated marked hepatocanicular cholestasis supportive of drug-induced liver injury. Further exploration following clinical and biochemical recovery revealed a year's ingestion of premix coffee with Ganoderma lucidum (Lingzhi) extract, an oriental mushroom. Given that there were no concomitant hepatotoxins and that he recovered following cessation of the offending agent, we attributed his DILI to prolonged Lingzhi ingestion.

DISCUSSION: Our case highlights a fundamental, yet common pitfall encountered by all doctors managing DILI, where patients may involuntarily withhold information based on their cultural beliefs and perception of what may or may not constitute a hepatotoxin. In this scenario, Ganoderma lucidum is well known among the public for its potent hepatoprotective effect, though there is no scientific evidence. As demonstrated, such misperception can lead to a highly frustrating diagnostic conundrum resulting in expensive and unwarranted investigations with extended admission for repeated blood-taking. In the absence of a specific biomarker to diagnose DILI in a suspected case, careful enquiry of exposure to various drugs and HDS, preferably with a checklist, is pertinent to avoid negligence.

ENTECAVIR DRUG-RESISTANT MUTATIONS AMONG PATIENTS WITH CHRONIC HEPATITIS B VIRUS INFECTION IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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BACKGROUND: Hepatitis B virus (HBV) infection remains a major health concern despite the introduction of Hepatitis B vaccination in the late 90s. Chronic HBV infection has been implicated as a significant cause of liver-related medical complications such as hepatocellular carcinoma and cirrhosis. Current guidelines recommend entecavir as one of several antiviral drugs for the treatment of chronic HBV infection. There is minimal data regarding mutation profiles associated with entecavir drug resistance in Malaysia.

OBJECTIVE: To identify Hepatitis B virus variants and their associated entecavir drug resistance mutations.

METHODS: Sera were collected from subjects with chronic hepatitis B infection who attended the Gastroenterology Clinic in Hospital Universiti Sains Malaysia. Polymerase chain reaction and sequencing were then performed to determine HBV genotypes as well as entecavir drug-associated mutations.

RESULTS: Samples were obtained from 91 subjects. Out of this number, 73 samples were successfully genotyped (genotype B, n = 47, genotype C, n = 26). Entecavir-related mutations were demonstrated in 9/73 (9.6%) of the samples (male, n=7, female, n=2).

DISCUSSION AND CONCLUSION: These findings highlight the risk of entecavir drug resistance among our study subjects. The results of this study may serve as a guide to future HBV-related therapies and management strategies in Malaysia.

ACCURACY OF NICE PREDICTION FOR SMALL COLORECTAL POLYPS - THE SWEET SPOT FOR HIGHER ACCURACY

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INTRODUCTION: Narrow-band imaging (NBI) is a powerful adjunct to diagnostic endoscopy, allowing real-time optical diagnosis with high accuracy. The NBI International Colorectal Endoscopic (NICE) classification, published in 2012, utilizes colour, vessel, and surface pattern on abnormal colorectal polyps and classifies them into distinct pathology. We aim to measure our performance of NBI prediction of small polyps and compare the accuracy with our earlier diminutive polyp study.

METHODOLOGY: We performed a retrospective analysis of prospectively collected data on all small polyps in our repository from February 2020 to June 2022. The operating endoscope system used was the Olympus Evis Exera III with CLV-190 Xenon Light Source. The colonoscopes used throughout the study were the Olympus CF-H190L and CF-HQ190L.

RESULTS: 223 (55 non-adenoma lesions, 168 adenomas) small colorectal polyps were encountered and given a real-time optical diagnosis using the NICE classification during colonoscopy. The NBI diagnosis was later compared with the histological diagnosis. The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of NBI in making an optical diagnosis of the adenomatous lesion were 99.40%, 96.36%, 98.82%, 98.15%, and 98.65%, respectively.

DISCUSSION: Our experience with the accuracy of NBI diagnosis for small polyps was 1.5 times significantly better than for diminutive polyps (98.65% vs. 96.47%; Odds Ratio 1.55, 95% Confidence Interval 1.076-2.232, $p < 0.01$). One of the reasons could be the longer time spent on lesion characterization owing to concerns of it harboring higher-grade dysplastic features, thus leading to greater attention to detail. The other possibility is that small polyps possess a larger surface area for easier focus resulting in better overall mucosal interrogation. Even though our results were statistically significant, concerns for advanced pathology (up to 6.5%) and subsequent decisions on surveillance preclude the prospect of implementing the resect-and-discard strategy for these lesions.

Odds Ratio

	Adenoma	Non-adenoma
Small	167	53
Diminutive	311	153

EOSINOPHILIC COLITIS: A RARE BUT TREATABLE DISEASE OF GASTROINTESTINAL TRACT

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BACKGROUND: Eosinophilic Colitis (EC) is a spectrum of Primary Eosinophilic Gastrointestinal Disease (EGIDs) characterized by pathologic eosinophilic infiltration along the gastrointestinal tract. It is a rare disease of unknown causes in most cases and affects people of all ages.

CASE PRESENTATION: This is a case report of EC, where a 69-year-old Malay gentleman with underlying Diabetes Mellitus and Hypertension presented to our unit with a month history of chronic diarrhoea, tenesmus, mucoid stool and weight loss. Colonoscopy showed multiple white spots throughout the colon and colonic biopsy demonstrated pronounced eosinophilic infiltrate (>50 per HPF) seen in the lamina propria associated with eosinophilic cryptitis. Blood results also showed significant eosinophilia (20.7%). Other workup for hyper eosinophilia was otherwise negative. Oral corticosteroid was initiated and his symptoms were resolved and eosinophilia counts gradually reduced. However, his symptoms recurred once corticosteroid was stopped.

CONCLUSION: Eosinophilic colitis remain a rare entity and to date the lack of codified guidelines left the challenge of managing it. Steroid are the main drug in the treatment of EC. Offering colonoscopy with multiple biopsies to all patient presented with chronic diarrhoea may increase the possibility of diagnosing EC and hence increase the data of understanding the disease for optimum management. More research is required in the future.

Keywords: Eosinophilic, Eosinophilic gastrointestinal disease, corticosteroid

SURVIVAL OF COLORECTAL CANCER PATIENTS IN MALAYSIA: RESULT FROM NATIONAL CANCER REGISTRY

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OBJECTIVE: Colorectal cancer (CRC) is the second leading cause of cancer death in Malaysia and pose a major burden on society. Aim of this study is to determine the overall survival of patients with CRC.

METHODS: This study utilised data from National Cancer Registry. We screened a total of 15,410 patients with colorectal cancer. Of these, we included a total of 3,891 patients with complete data set from 2012 until 2016. Kaplan-Meier estimates and log-rank tests were performed to determine the overall survival. Multiple Cox regression was conducted to determine the hazard ratio (HR) of CRC.

RESULTS: The 1-, 3- and 5-year survival rates were 55.3%, 34.3%, and 21.4% respectively with median survival time of 4 years. A significant difference in CRC patients' survival rate was observed between ethnic groups ($\chi^2 = 24.88$, $p < 0.001$), cancer stages ($\chi^2 = 120.17$, $p < 0.001$), and sites of cancer ($\chi^2 = 12.34$, $p = 0.006$). Chinese patients have a higher chance of death (HR = 1.45, 95% CI 1.04 - 2.02, $p = 0.028$) as compared to Malay. Stage 4 (HR = 3.53, 95% CI 1.78 - 7.02, $p < 0.001$) and stage 3 (HR = 2.26, 95% CI 1.13 - 4.43, $p < 0.001$) have higher chance of death as compared to stage 0. In addition, HR for patients aged more than 80 years old were significantly higher than patients aged less than 24 years old (HR = 3.83×10^8 , 95% CI 4.90×10^7 - 2.99×10^9 , $p < 0.001$).

DISCUSSION & CONCLUSION: This study highlights the low survival rates of CRC patients in 2012-2016. These findings underscore the importance of public health policies and programmes to enhance awareness on CRC from screening to developing strategies for early detection and management, to reduce CRC associated mortality.

NON-ALCOHOLIC FATTY LIVER DISEASE AND ITS ASSOCIATION WITH CANCERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

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OBJECTIVE: Non-alcoholic fatty liver disease (NAFLD) is commonly considered a precursor of liver as well as other types of cancer. This meta-analysis of observational studies aims to determine the prevalence and quantify the magnitude of the association between non-alcoholic fatty liver disease (NAFLD) and extrahepatic cancer.

METHOD: We searched PubMed, ProQuest, Scopus, and Web of Science from database inception to March 2022, to identify eligible studies reporting the prevalence of NAFLD and the risk of incident cancers amongst adult (age ≥ 18 years) individuals. Data from selected studies were extracted, and meta-analysis was performed using random-effects models to obtain pool prevalence with 95% CIs. The quality of the evidence was assessed through Newcastle Ottawa Scale (NOS).

RESULTS: We identified 11 studies that met our inclusion criteria, involving 222,523 adults and 3 types of cancer; hepatocellular carcinoma (HCC), breast and other types of extrahepatic cancer. Overall pool prevalence of NAFLD and cancer was 26.0% (95% CI: 16.0 - 35.0), while 25.0% of people had NAFLD and HCC (95% CI: 7.0 - 42.0). NAFLD and breast cancer had the highest prevalence out of the three forms of cancer, at 30.0% (95% CI: 14.0 - 45.0). While the pool prevalence for NAFLD and other cancer was 21.0% (95% CI: 12.0 - 31.0).

CONCLUSION: The review suggests that people with NAFLD may be at an increased risk of cancer, that might not influence the liver but also another organ such as breast, and bile. The findings serve as important evidence for policymakers to evaluate and recommend measures to reduce the prevalence of NAFLD through lifestyle and environmental preventive approaches.

LIVER STIFFNESS IMPROVEMENT AFTER ACHIEVED SVR12 AMONG CHRONIC HEPATITIS C PATIENT

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BACKGROUND: Management of Hepatitis C virus (HCV) infection has been greatly evolved in the last few years. Currently, the newer treatment direct acting antivirals (DAAs) promise a higher rate of efficacy to compare to previous treatment, pegylated interferon. The goal of HCV treatment is to eradicate the virus and to avoid the progression of liver fibrosis and HCV-related disease. Sustained virologic response (SVR) is the most widely used efficacy endpoint in clinical studies of hepatitis C and represents the eradication of HCV from the body. This study was conducted to determine liver stiffness outcome using APRI and FIB-4 scores pre and after SVR 12 among cirrhotic and non-cirrhotic patients.

OBJECTIVE: The aim of the study was to determine the change in liver stiffness measurements after successful treatment with DAAs in chronic Hepatitis C between 2018 till December 2021 by using APRI and FIB4 and determine the factors associated with changes in the status of liver fibrosis.

METHOD: Study design was retrospective cohort, and the study involved a total of 296 patients from Hospital Sultanah Nur Zahirah, Kuala Terengganu. It involved adults above 18 years old and had achieved SVR-12 with DAAs (Sofosbuvir + Daclatasvir) regardless of treatment naïve or experience, presence of cirrhosis or virus genotype. They were evaluated using APRI and FIB-4 scores at the baseline and SVR-12.

RESULTS: APRI and FIB-4 scores were significantly associated with SVR12. The changes in mean (SD) APRI score were 1.68 (3.04) at baseline to 0.72 (1.07) after SVR12, while the mean (SD) FIB-4 score was from 3.40 (4.03) at baseline to 2.75 (2.97) after SVR-12. The multiple regression analysis revealed that clinical data including platelet, AST and ALT were significant predictors of advanced fibrosis (P 0.05). Only 1.67 percent of patients developed HCC after achieving SVR, thus the median survival time cannot be determined.

CONCLUSION: Our study has demonstrated a significant reduction in liver stiffness (based on APRI and FIB-4) after achieving SVR-12. Clinical data including platelet count and ALT and AST levels are significant independent predictors of liver fibrosis. After achieving SVRs, the risk of developing hepatocellular carcinoma is extremely low.

Keywords: DAAs, Liver fibrosis, HCV, SVR, HCC

LIVER DYSFUNCTION BEYOND COVID-19 INFECTION: A LONGITUDINAL FOLLOW-UP STUDY

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INTRODUCTION: Abnormal liver function in COVID-19 infection is a recognized entity, however, there is lack of data regarding sequelae of liver function post COVID-19 infection.

OBJECTIVE: To determine the prevalence and predictive factors of abnormal liver function post COVID-19 infection.

METHODOLOGY: This is a multicentre longitudinal follow-up study on COVID-19 patients with abnormal liver function (AbLFx) who were admitted for COVID-19 infection in UMMC and HUiTM from 1st of March 2020 until 31st October 2021. Prior to discharge, detailed medication and alcohol consumption history, screening for viral hepatitis, hepatic steatosis and fibrosis assessment via Fibroscan[®], and Ultrasound of Abdomen was performed. A repeat Liver Function Test was performed at 6 months post-infection to assess for normalization of liver function.

RESULTS: 174 COVID-19 patients with AbLFx on admission were evaluated. The mean age was 47.8 ± 14.3 years, 58% were male and the majority (58.6%) were of Malay ethnicity. Mean Body Mass Index, Continuous Attenuation Parameter and Elastography were 29.8 ± 5.5 kg/m², 288.3 ± 58.3 dB/m and 7.5 ± 5.0 kPa respectively. 96 patients had liver injury (defined as AST or ALT >3X UL or GGT or ALP or Total Bilirubin >2x UL) during hospitalization and 120 patients received disease-modulating pharmacotherapy. At end of the study, 83 (47.7%) had persistent AbLFx. Multivariate analysis identified the following condition as predictive factors for persistent AbLFx in COVID-19 patients: S3 steatosis on Fibroscan, liver injury, treatment with dexamethasone or enoxaparin, and those requiring mechanical ventilation.

CONCLUSION: AbLFx post COVID-19 infection is common and due to multiple factors. Patients with severe hepatic steatosis and severe infection, reflected by liver injury, requiring dexamethasone, enoxaparin and mechanical ventilation are more likely to be affected.

HIGHER RELATIVE ABUNDANCE OF BACTEROIDETES AND SUTTERELLA AND LOWER BIFIDOBACTERIUM SPECIES IN VEDOLIZUMAB-RESISTANCE INFLAMMATORY BOWEL DISEASE PATIENTS

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BACKGROUND/AIMS: Vedolizumab (VDZ) has been proven to a potential treatment for IBD patients with its gut-selectivity and less systemic effects on the patients. Despite empirically demonstrated therapeutic efficacy of up to 50% of treated IBD patients responding well to induction therapy, some patients do not benefit from this treatment and there is no clear mechanism to explain the variable response towards VDZ treatment. Altered gut microbiota, metabolites and dietary habits are implicated in IBD and the interaction between these three factors may provide an insight on the mechanisms of action.

METHODS: 15 IBD patients who were scheduled for VDZ treatment (n=10 UC or n=5 CD) were enrolled, and the mean treatment duration was 1 years. DNA extraction was performed on stool samples (n=11 pre-treatment, n=4 post-treatment) using Qiagen DNA purification kit. 16s rRNA V3 region sequencing was performed using Nanopore system. Bioinformatic analysis was performed using QIIME2. A 2-week dietary record was obtained from the patients and the macronutrients were analysed using Nutritionist Pro.

RESULT: Microbiota analysis reveals higher relative abundance of genus *Bifidobacterium*, *Ligilactobacillus*, *Phocaeicola*, and *Bacteroides*, and decrease in *Blautia A*, *Streptococcus*, *Escherichia* and *Prevotella* in post-treatment samples in comparison to baseline. Sub-analysis showed higher relative abundance of species *Phocaeicola vulgatus*, *Bacteroides stercoris* and *Sutterella wadsworthensis* and decrease of *Bifidobacterium adolescentis* in remitters. All patients do not reach the recommended intake of dietary fibre of 20-30 grams per day. The average of daily energy requirement for 88% of patients was 1375 kcal/day, which was lower than the daily recommended calorie intake per day. Additionally, 88% of participants consumed more fat than was advised, and 63% of patients fell short of the 50-65% total energy intake for recommended carbohydrates intake.

DISCUSSION: Our findings showed the loss of *Bifidobacterium adolescentis*, and increase of *Phocaeicola vulgatus*, *Bacteroides stercoris* and *Sutterella wadsworthensis* may promote intestinal inflammation activities in remitters. This study will shed light on the association between the gut microbiota, metabolites, and dietary intake, and how patients respond to the VDZ treatment. It will also be able to generate a predictive model for the course of the therapy.

Keywords: Inflammatory bowel disease; Vedolizumab; gut microbiota; micronutrients; metabolites

EOSINOPHILIC GASTROENTERITIS MIMICKING SMALL BOWEL OBSTRUCTION: A CASE REPORT

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OBJECTIVES: To aim and present that early intervention in Eosinophilic Gastroenteritis (EG) can bring the desired outcome and full recovery in a patient.

CASE REPORT: Here, we describe a rare presentation of Eosinophilic Gastroenteritis. Mr. S is a 24 years old Malay fireman with no known medical illness previously. He presented with upper abdominal pain, vomiting and non bloody diarrhoea for 2 weeks. Clinically, he was not anemic, no purpuric rashes and abdominal palpation was normal with no organomegaly noted. There were no history of angioedema in the past as well. Interestingly, his full blood count revealed high eosinophils count of $10.46 \times 10^3/\text{ul}$.

The full blood picture shows evidence of leukocytosis with eosinophilia and mild basophilia. No blast or abnormal lymphoid cells. CT abdomen done showed segmental jejunal wall thickening with proximal small bowel obstruction. Colonoscopy on 31/12/2021 revealed normal findings but the colonic biopsy showed lymphoplasmacytic cells infiltration with mild increase in eosinophils. No dysplasia or evidence of malignancy noted. In view of small bowel obstruction, antegrade enteroscopy and capsule endoscopy was done on the patient. Capsule endoscopy showed jejunitis with thickened wall and no small bowel obstruction or bleeding seen on the enteroscopy. Fluorescence in situ hybridization (FISH) for FIPILI-PDGFR α rearrangement done and its not detected. His bone marrow aspirate and trephine biopsy shows marked eosinophilia. He was then started on tapering dose of Tab Prednisolone and showed complete resolution of symptoms. Colonoscopy repeated on 28/4/22 showed normal bowel findings. His repeated colonic biopsy showed unremarkable colonic mucosa with no eosinophilic infiltrations. Besides that, his latest eosinophilic count has already normalized to $0.70 \times 10^3/\text{ul}$.

CONCLUSION: This case highlights the importance of being able to recognize Eosinophilic Gastroenteritis. Its diagnosis requires a combination of clinical, pathological radiological and endoscopic findings.

A RETROSPECTIVE REVIEW OF CHICAGO 3 ESOPHAGEAL MOTILITY DIAGNOSIS IN PATIENTS WITH NON OBSTRUCTIVE DYSPHAGIA - A SINGLE CENTRE EXPERIENCE

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INTRODUCTION: High resolution impedance esophageal manometry (HRIM) is the gold standard test for non-obstructive dysphagia, however limited local epidemiological data is available.

We aimed to review esophageal motility diagnoses based on Chicago 3 classification in patients with non-obstructive dysphagia

METHODS: This was a retrospective study involving consecutive patients who was performed HRIM (36 pressure channels and 8 impedance channels, Laborie, Netherlands) between 2014 to July 2022 from a single institution (HUSM Kubang Kerian, Kelantan). Indication of HRIM was non obstructive dysphagia and the motility diagnosis was based on Chicago Classification 3.0. Patients with incomplete data were eliminated and final data analysed with SPSS version 26 (SPSS Inc. Chicago, USA).

RESULTS: Overall 587 number of cases were performed, of which 466 were analysed and others did not satisfy the inclusion criteria. Most number of cases (23%) were performed in 2016, and the least number of cases were performed during the COVID-19 pandemic (mean reduction of cases performed of 57.4%).

Of the 466 patients, males (48.7%) and females (50/9%) were equally distributed with a mean age of 44.15 years (SD 15.91), with 61.6% of them being overweight & obese.

Normal findings stood at 29.8% while IEM and EGJOO were the commonest diagnosis with prevalence of 29.8% and 23.4% respectively. The prevalence of achalasia was 3.4%, with type 1 being the most common (2.1%). Other motility diagnoses are shown in table below.

Using univariable and multivariable analysis, none of the factors including age, gender and BMI were significantly associated with IEM or EGJOO (all $p > 0.05$).

CONCLUSION: In this group of patients with non-obstructive dysphagia and GERD, who did HRIM, abnormal esophageal motility was found in 70% with IEM and EGJOO being the commonest findings. The prevalence of achalasia was 3.4%.

HRIM Diagnosis (Chicago 3 Classification)

Diagnosis	Prevalence	%
Normal	139	29.8
IEM	140	30
EGJOO	109	23.4
Achalasia	16	3.4
Absent contractility	12	2.6
Fragmented peristalsis	11	2.4
DES	7	1.5
Jackhammer esophagus	4	0.9
Hypotensive LES	16	3.4
UES related	4	0.9
Others	8	1.7

CASE OF A FLARE OF HEPATITIS B IN A PATIENT WHO IS ON TENOFOVIR TREATMENT

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INTRODUCTION: Hepatitis B virus (HBV) infection remains a global public problem with changing epidemiology due to several factors including vaccination policies and immigration. All patients with CHB infection are at increased risk of progression to cirrhosis and hepatocellular carcinoma.

WHO estimated 257 million people living with Hepatitis B, resulting in 887000 deaths , mostly from complications.

CASE REPORT: This is a 42 year old, Chinese male. He presented in 2015 with a flare of hepatitis B. hwe was commenced on T. tenofovir 300mg daily and was complaint to his medication. He visited the gastroenterology clinic every 6 months and his liver function test was normal.

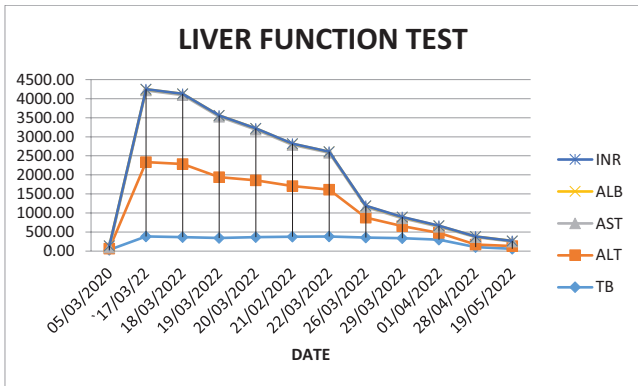
In 2022 February he missed his medication for 3 weeks. He then presented with jaundice, abdominal pain, lethargy and nausea. He had taken tradistional Chinese medication for 2 week. He was admitted to the hospital and tenofovir was restarted. He was monitored closely. A repeat ultrasound showed liver cirrhosis. His liver function deteriorated rapidly and he was referred to hospital Selayang for close monitoring and the possibility of liver transplant. However after 10 days his liver function improved.

CONCLUSION: We presented a case of a flare of hepatitis B in a patient who is on tenofovir treatment. The annual incidence of hepatitis flares was calculated to be 27% in HBeAg-positive patients and 10% 279 HBeAg-negative counterparts. Clinicians should consider different causes of hepatic decompensation in a patient on treatment. Compliance to medication is equally important in treatment success.

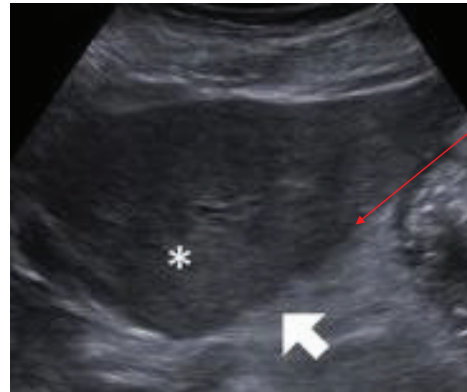
Upon follow up at the clinic his liver function was normalized.

	5/3 /20 baseline	17/3/22	18/3	19/3	20/3	21/3	22/3	26/3	29/3	1/4/22	28/4	19/5/22	
PLATELET	218	213	-	187	-	-	-	189	170	122	130	136	150-410(10x9/l)
T.Bili	33.9	385.7	369	346.6	369	377	384	357.3	339.4	299.7	105.7	60.3	2.5-21 (umol/L)
ALT	32	1950	1916	1595	1490	1330	1231	521	315	177	64	72	5-41U/L
AST	-	1879	1806	1587	-	1079	964	276	210	164	195	117	4-40 U/L
ALB	46	31	33	30	32	30	27	30	26	22	18	18	30-52 g/L
INR	1.5	2.56	2.53	2.77	2.79	3.43	3.5	3.3	2.6	2.4	-	1.64	0.8-1.2
Lactate	-	2	2.5	2.6	2.7	3.0	2.2	-					

Investigations



*ULTRASOUND



- Liver cirrhosis

CHALLENGES IN DIFFERENTIATING DRUG-INDUCED LIVER INJURY AND HEPATITIS E INFECTION: A CASE REPORT

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BACKGROUND: Diagnosing drug-induced liver injury (DILI) is done by recognising the causative agent and excluding other causes of acute hepatitis. This approach becomes challenging when resources are limited.

CASE REPORT: A 54-year-old woman with diabetes and bilateral ureteric calculi presented with flank pain and fever. She commenced on oral Ciprofloxacin a week prior. Her liver enzymes during admission were markedly elevated (ALT 1232 U/L, AST 1449 U/L, ALP 801 U/L, bilirubin 68 mol/L), but she was not in acute liver failure. Abdominal ultrasound showed fatty liver changes. A full liver screen was performed; apart from a positive c-ANCA, her viral hepatitis A-C, EBV, CMV serology, and autoimmune liver screens were negative. Results for hepatitis E serology were pending.

As her liver enzymes worsened with a peak ALT of 1900 U/L and bilirubin of 106 mol/L, a percutaneous liver biopsy was performed. The differentials were viral hepatitis or DILI. At week 4, her liver enzymes steadily improved. Viral hepatitis E serology results were returned 5 weeks later and were negative.

DISCUSSION: Clinicians face many problems in managing patients, including financial implications; availability of in-house tests; long waiting lists for radiology appointments; and turnaround time for reporting histopathology results due to the requirement of special stains. Hepatitis E serology is currently outsourced and requires a 3-week reporting time, which impacts patient management.

In our case, differentiating DILI from acute hepatitis E infection was difficult as the only potential causative agent for DILI was Ciprofloxacin. In a population-based study in the UK,¹ fluoroquinolone induced liver injury is reportedly rare, with an incidence of illness due to hepatotoxicity being 0.54 per 10,000 people taking Ciprofloxacin.

CONCLUSION: Although liver biopsy is an important modality in identifying the cause of liver injury, it is best interpreted in conjunction with other non-invasive tests.

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CYSTIC HEPATIC METASTASES: A RARE MIMIC OF LIVER ABSCESSSES

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BACKGROUND: Colorectal cancer is the third most common cancer worldwide and can present with liver metastases. Cystic hepatic metastases (CHM) are rare and only a few cases have been described in the literature. In the presence of sepsis, CHM can mimic liver abscesses posing a diagnostic challenge to clinicians.

CASE REPORT: A 66-year-old obese lady presents with fevers, poor appetite and abdominal discomfort. She had raised inflammatory and septic markers; white cell count $25.2 \times 10^9/L$, C-reactive protein level of 149.3 mg/L. An abdominal ultrasound showed liver lesions with liquefied components, largest measuring 9.5 cm in segment VI (Fig 1). A percutaneous drain was inserted, draining non-purulent serosanguineous fluid. Despite intravenous antibiotics, aspiration and drainage, the patient's septic parameters worsened. A computed tomography (CT) showed multiple cystic liver lesions (Fig 2) and a circumferential colonic mass over the hepatic flexure with signs of colonic obstruction.

Despite palliative loop ileostomy, our patient passed away a few days later due to overwhelming sepsis with multi-organ failure.

DISCUSSION: CHM from colonic origin is rare. CHM is formed due to rapid enlargement of tumour, depleting its blood supply leading to an area of central necrosis and haemorrhage.¹ Mucinous adenocarcinomas originating from the colon, pancreas and ovaries can cause cystic metastases.²

In the presence of sepsis, differentiating CHM from liver abscesses becomes challenging as superimposed bacterial infection of the cystic lesions or necrotic area can occur. Radiologically, CHM appears heterogeneous and ill-defined with a peripherally enhancing rim in the arterial phase of CT. A higher degree of septations are seen compared to liver abscesses. However, clinical findings of a primary tumour and multiplicity of liver lesions should heighten clinicians' suspicion of CHM.

CONCLUSION: CHM is an important differential diagnosis in patients presenting with multiple cystic liver lesions especially when a primary tumour is suspected.

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Fig 1. Ultrasound showing a large cystic lesion in segment VI of the liver

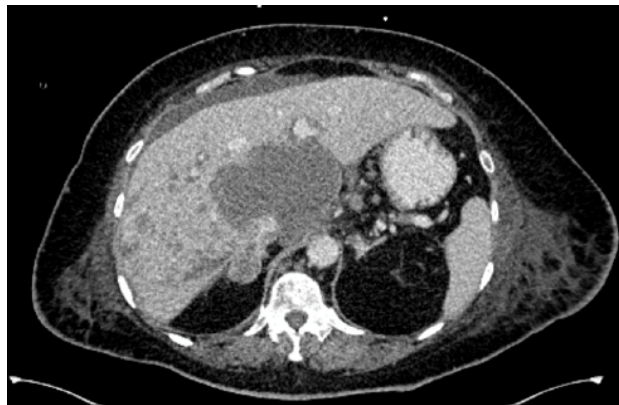


Fig 2. Computed tomography confirming cystic liver lesions

AN UNEXPECTED CAUSE OF EXTERNAL BILIARY DUCT COMPRESSION - A CASE REPORT

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INTRODUCTION: Biliary duct compression is a rare presentation of abdominal aortic aneurysm (AAA). The most common symptoms of AAA are abdominal or lumbar pain and limb ischaemia from thromboembolism. Common causes of extra-hepatic bile duct compression include pancreatic head or liver mass and enlarged periportal or perihepatic nodes. We are reporting a case of an uncommon cause of biliary duct compression due to AAA.

CASE PRESENTATION: An 80-year-old lady with underlying Diabetes, Hypertension and history of open cholecystectomy 30 years ago was referred for evaluation of raised alkaline phosphatase (ALP) ranging 400 to 700 and gamma glutamyl transpeptidase (GGT) 377 with normal Alanine Transaminase (ALT), Aspartate Transaminase (AST) and Billirubin. Otherwise, she is asymptomatic, has never been jaundice, on physical examination, there is no abdominal tenderness, hepatomegaly or stigmata of chronic liver disease. Ultrasound revealed infrarenal aortic aneurysm measuring 4.9cm x 5.3 cm in diameter and 5.2 cm in length with intramural thrombus causing more than 50% stenosis. Magnetic resonance cholangiopancreatography (MRCP) and CT Angiogram done which showed distal common bile duct and main pancreatic duct were compressed and displaced by the aneurysm with no intraductal filling defect within. (Figure 1 & 2). She was referred to vascular team for endovascular aneurysm repair. However, in view of elderly age and patient is asymptomatic, she opted for conservative management.

CONCLUSION: Large AAA is classified as the cause of extra-hepatic bile duct compression. This uncommon imaging finding was almost certainly the explanation for abnormal liver test in this case. Uncommon presentations of common diseases can baffle clinician thus less common causes need to be considered when the clinical picture is not a classic presentation.

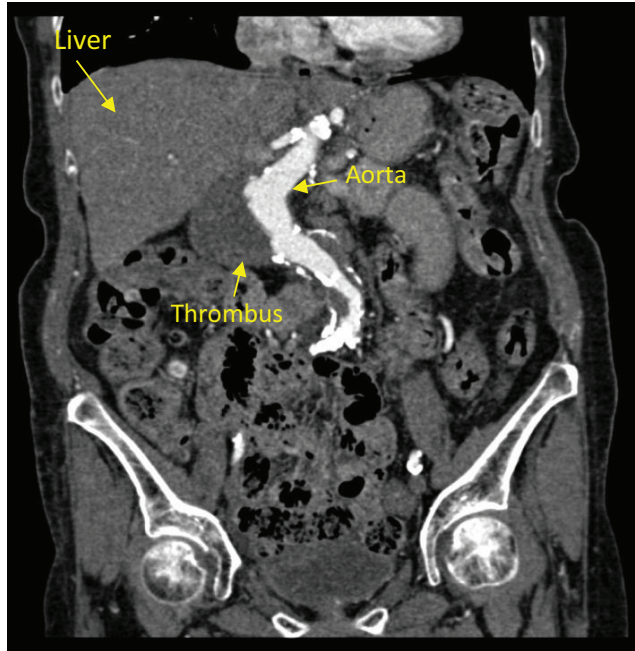
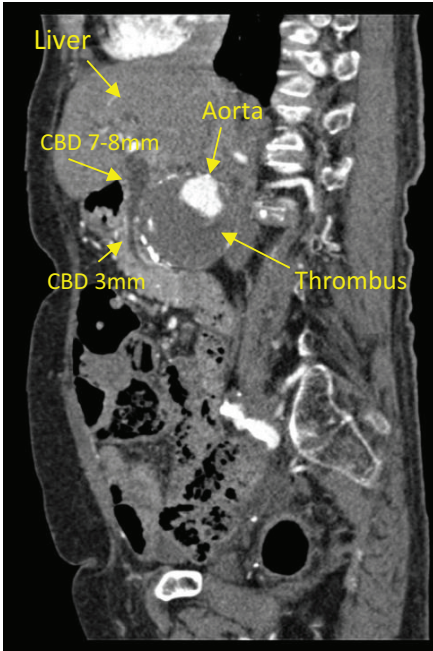


Figure 1 and Figure 2. CT images showed biliary duct compressed by AAA. CBD, common bile duct; AAA, abdominal aortic aneurysm

OVERCOMING THE FRUSTRATIONS OF NASOENTERIC TUBE DEPLOYMENT; REPLACING OVERTHE-GUIDEWIRE TECHNIQUE WITH THE MORE EFFICIENT AND TIME-SAVVY THERAPEUTIC GASTROSCOPE METHOD

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INTRODUCTION: Post-pyloric enteral feeding provides an alternative route for nutrition in patients who are not candidates for nasogastric tube insertion. This method involves the insertion of a 240 cm nasoenteric tube (NET) into the proximal small bowel. Our centre adopts the conventional peroral endoscopic over-the-guidewire (OTG) post-pyloric NET insertion as we do not have an ultrathin GIF-XP190N gastroscope to allow transnasal route placement. Recently, we switched to an alternative larger therapeutic gastroscope (TG) method for NET insertion (10 or 12 Fr) and compared procedural time and success rates against the OTG technique.

METHOD: We retrospectively analysed prospectively collected data from July 2017 to June 2022 in our repository. The definition of *technical success* is the successful placement of NET, confirmed by contrast on fluoroscopy. The GIF-1TH190 or GIF-XTQ160 gastroscopes with a working channel of 3.7 mm and 6.0 mm, dependent on the NET size, are used in our TG cases, whereas there was no preference for the OTG cases.

RESULTS: During our study interval, there were 112 NET (25 OTG, 87 TG method) deployment procedures for malignant duodenal strictures. The duration of the endoscopic procedure in the OTG arm was significantly longer ($U=99.0$, $p<0.001$) compared to the TG arm (median 65.0 minutes, IQR 25.4 versus median 20.0 minutes, IQR 13.0). Moreover, the fluoroscopic time in the OTG arm was also longer ($U=51.5$, $p<0.001$) compared to the TG arm (median 15.1 minutes, IQR 13.25 versus median 2.10 minutes, IQR 1.80).

DISCUSSION: Our results demonstrate the superiority of the TG method, resulting in 3.25 times quicker procedural time and 7.20 times shorter fluoroscopy duration. The bigger TG biopsy channel affords the smooth insertion of small-diameter NETs, benefitting endoscopic visualisation during NET deployment. The NET also affords excellent stability with reduced chances of wire coiling during the push-and-pull and oronasal transfer steps, thus, mitigating the need for multiple attempts.

ONE-YEAR PHYLLANTHUS NIRURI SUPPLEMENTATION IN MILD-TO-MODERATE NON-ALCOHOLIC FATTY LIVER DISEASE: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL

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BACKGROUND: While *Phyllanthus niruri* exhibited hepatoprotective activity, this study aimed to evaluate its effectiveness and safety in mild-to-moderate non-alcoholic fatty liver disease (NAFLD).

Methods: A total of 226 individuals with a controlled attenuation parameter (CAP) score of >250 db/m (S2-S3) and a fibrosis score of <10 kPa (F0-F2) were randomized to consume a standardized *Phyllanthus niruri* extract (intervention; n=112) or a matched placebo (control; n=114) for 12 months in addition to lifestyle modifications. Intention-to-treat analysis was conducted to compare changes in the CAP score, fibrosis score, liver enzyme levels and metabolic profile from baseline, along with adverse events (AEs), between the two groups at the end of treatment.

RESULTS: The intervention and control groups did not show a significant difference in the changes of the CAP score (-15.98±36.93 db/m vs. -17.19±43.40 db/m; p=0.829). An improvement in the fibrosis score was detected in the intervention group but not in the control group (-0.70±1.71 kPa vs. +0.13±1.63 kPa; p=0.001). Additionally, the intervention group showed a greater reduction in the alanine aminotransferase (ALT) level as compared with the control group (-11.03±31.16 U/L vs. -4.45±31.69 U/L; p=0.0443). The two groups did not differ in changes of the metabolic profile. The numbers of AEs were also comparable between the two groups, and no deaths were reported.

CONCLUSION: One-year *Phyllanthus niruri* supplementation was not shown to be superior over placebo in alleviating steatosis in mild-to-moderate NAFLD. However, it demonstrated some clinical benefits, evidenced by a significant reduction in the fibrosis score and ALT level.

Keywords: Non-alcoholic fatty liver disease; herbal medicine; liver fibrosis; liver cirrhosis; liver function tests; *Phyllanthus niruri*

HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS FOLLOWING SARS-CoV-2 BOOSTER VACCINATION WITH LIVER INVOLVEMENT

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SUMMARY: Hemophagocytic lymphohistiocytosis (HLH) is a rare and rapidly progressive systemic hyperinflammatory syndrome which could be life threatening causing multi organ failure. HLH triggered by conventional vaccination such as influenza has been reported over the years. Here we report a case of HLH following SARS-CoV-2 booster vaccination.

CASE PRESENTATION: A gentlemen in his mid 40's with type two diabetes mellitus was fully vaccinated with two doses of inactivated CoronaVac SARS-CoV-2 vaccine. He then developed lower limb swelling and progressive weakness leading to a fall ten days following his booster dose of mRNA Comirnaty SARS-CoV-2 vaccine. Standard vaccination scheduling was complied with by the patient. Two days prior to being admitted to our centre he had fever, diarrhea and fatigue with impaired consciousness on the day of presentation. He was hypoglycemic upon admission (Glucose: 2.8mmol/L) and was covered with broad spectrum antibiotics for presumed infection and a computed tomography (CT) of the Brain was performed that ruled out a cerebrovascular accident.

The initial evaluation showed jaundice (79 umol/L), splenomegaly, pancytopenia (white cell count, $3.1 \times 10^9/L$; hemoglobin, 8.5 g/L; platelet, $54 \times 10^9/L$), elevated triglyceride (6.2 mmol/L), decreased fibrinogen (1.97 g/L), and increased transaminase (AST 585 U/L ALT 198) and lactate dehydrogenase (1831 U/L) levels. Further tests showed a high serum ferritin level (14081 µg/L) and negative tests for SARS-CoV-2 PCR, Dengue and Leptospirosis serologies.

At day 7 of admission, he clinically deteriorated with a drop in Glasgow Coma Scale (GCS) secondary to repeated hypoglycemia and blood parameters showing worsening of liver, renal and septic parameters. He was electively intubated and transferred to Intensive Care Unit (ICU) for continuous veno-venous hemodialysis (CVVHD). A Repeated CT brain proved normal and a low arterial ammonia (54 u/dL) pointed against hepatic encephalopathy. Following the event, bone marrow was performed and showed evidence of hemophagocytosis (Figure 1). Therefore, HLH was confirmed based on both the HLH-2004 diagnostic criteria (fulfilling six out of the eight criteria) and the HLH probability calculator (HScore, 304). According to "the recommendations for the management of HLH"[4-5], dexamethasone was prescribed as per hematology consult.

USG Abdomen showed fatty liver with acalculous cholecystitis and splenomegaly with no ascites. Liver biopsy was performed on day sixteen of admission to further evaluate liver dysfunction and to help contribute to the diagnosis of the underlying disorder and showed non specific portal and sinusoidal abundant lymphohistiocytic cell infiltration highlighted by CD68 and CD3 immunohistochemistry with no hemaphagocytosis. Mild portal fibrosis seen with intact interlobular bile ducts and preserved lobular architecture with presence of a few spotty necrosis (Figure 1). Cytomegalovirus and tuberculosis in both marrow and liver biopsies tissues were negative. Trephine marrow biopsy and flow cytometry later confirmed presence of HLH with no underlying lymphocytic malignancies. Dynamic changes of ferritin and triglyceride clearly depicted in Figure 2.

INVESTIGATIONS:

TABLE 1 : INITIAL BLOOD INVESTIGATION

TEST	RESULTS	NORMAL RANGE
<i><u>Complete Blood Count</u></i>		
White blood cell ($10^9/L$)	3.1	3.5-9.5
Neutrophil count (%)	79.9	40-75
Lymphocyte count (%)	8.1	20-45
Hemoglobin (g/L)	8.5	130-175
Platelet ($10^9/L$)	54	125-350
Reticulocyte count (%)	1.3	0.5-2.5
<i><u>Coagulation</u></i>		
APTT (s)	70.4	28-43.5
PT (s)	13.4	11-16
INR	1.0	<1.1
Fibrinogen (mg/dL)	147	200-400
D-Dimer (mg/L)	6.8	<0.5
<i><u>Hepatic and Renal Function</u></i>		
ALP (U/L)	368	30-120
ALT (U/L)	198	5-35
AST (U/L)	585	8-40
Total bilirubin ($\mu\text{mol/L}$)	79	3-22
Direct bilirubin ($\mu\text{mol/L}$)	49	0-5
Lactate dehydrogenase (U/L)	1831	109-245
Albumin (g/L)	19	35-50
Globulin (g/L)	27	23-32
Blood urea nitrogen (mmol/L)	10.5	2.5-6.1
Creatinine ($\mu\text{mol/L}$)	107	46-92

TEST	RESULTS	NORMAL RANGE
<u>Fasting Lipids</u>		
Triglycerides (mmol/L)	6.2	<1.7
Total cholesterol (mmol/L)	3.3	<5.2
HDL-C (mmol/L)	0.41	1.29-1.55
LDL-C (mmol/L)	INVALID	2.7-3.1
<u>Inflammatory Markers</u>		
Ferritin (µg/L)	>15000	4.6-204
hsCRP (mg/L)	13.5	0-5
Complement 3 (g/L)	1.24	0.79-1.52
Complement 4 (g/L)	0.36	0.16-0.38
<u>Virus</u>		
EBV IgM	Negative	Negative
EBV IgG	Positive	Negative
SARS-CoV-2 RNA PCR	Negative	Negative
Hepatitis A IgG	Negative	Negative
Hepatitis A IgM	Negative	Negative
Hepatitis B surface antigen	Negative	Negative
Hepatitis B core IgG	Negative	Negative
Hepatitis C Ab	Negative	Negative
VDRL	Negative	Negative
HIV	Negative	Negative
ANA	Negative	Negative
dSDNA	Negative	Negative
AMA	Negative	Negative
ASMA	Negative	Negative
Anti LKM	Negative	Negative
CERULOPLASMIN (g/L)	0.5	0.3-0.8
AFP	4.2	<9
Blood Culture	Negative	Negative
Fungal Culture	Negative	Negative
Leptospirosis IgM	Negative	Negative
AMMONIA (u/dL)	42	11-32
Burkholderia Pseudomallei	Negative	Negative
PROCALCITONIN	11.04	<0.5
MYCOPLASMA IgM	Negative	Negative
BFMP X3	Negative	Negative
AFB in Liver Biopsy/Bone Marrow	Negative	Negative
CMV in Liver Biopsy/Bone Marrow	Negative	Negative
<i>Hemophagocytosis in Bone Marrow</i>	Positive	Negative
<i>Features favouring HLH in Liver Biopsy</i>	Positive	Negative
<i>HLH 2004 DIAGNOSTIC CRITERIA</i>	6 of the 8 criteria	Cut off: 5
<i>HLH PROBABILITY CALCULATOR (H-SCORE)</i>	304	Cut off : 169

BFMP: blood film for microscopy parasite ; AFP: alpha fetoprotein ; AFB : acid fast bacilli ; APTT : activated partial thromboplastin time ; PT : prothrombin time INR : international ratio ; ALP : alkaline phosphatase ; ALT : alanine transferase ; AST : aspartate transaminase ; EBV : Epstein-barr virus ; CMV: cytomegalovirus ; ANA : Antinuclear antibodies ; AMA :Antimitochondrial antibodies ; ASMA : Antismooth muscle antibodies ; Anti LKM : Anti Liver-kidney-microsomal antibodies

OUTCOME AND FOLLOW-UP: Despite standard first line HLH treatment with dexamethasone 10mg/BSA(m2), patient unfortunately succumbed to neutropenic fever and septic shock with fungal cultures growing aspergillus species at four weeks of admission prior to being transferred to a hematology centre for second line therapy.

DISCUSSION: In this case, the HLH was not well controlled because of delay in recognition and diagnosis due to lack of literature surrounding the possible side effects post SARS CoV-2 booster vaccination, despite the timely management. Identifying the trigger can have implications for both treatment and prognosis. Early treatment should be directed towards both the underlying cause and the immune response. Little is known about the occurrence of HLH following vaccination, but in children, cases have been observed.

In summary, HLH should be considered in all adults with unexplained febrile cytopenias following SARS-CoV-2 vaccination. Diagnosis prompts aggressive therapy and a thorough evaluation for underlying aetiologies including history of recent vaccination.

FIGURES:

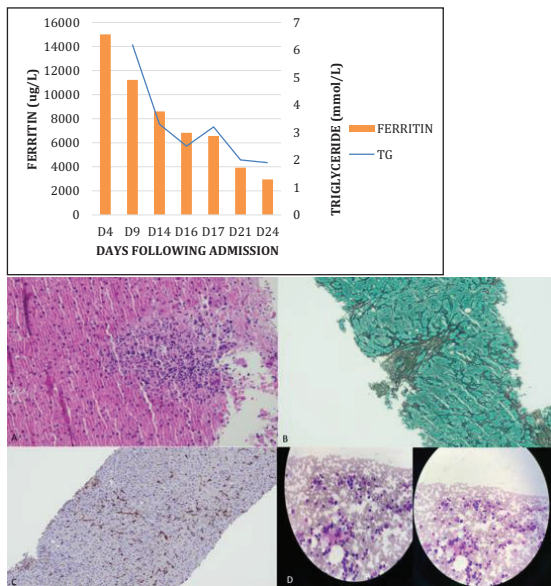


FIGURE 1 : A. Liver biopsy (H&E X40HPE) showing Lymphohistiocyte Infiltrates at portal tract. B.Masson Trichrome showing portal fibrosis (x20HPE). C.CD68 staining the histiocytes within the sinusoids (X20HPE). D Bone marrow showing hemaphagocytosis.

Figure 2: Dynamic changes of Ferritin and Triglyceride.

INFLUENCE OF MIRTAZAPINE ON GASTRIC ACCOMMODATION AND GASTRIC EMPTYING: A MECHANISTIC STUDY IN HEALTHY VOLUNTEERS

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OBJECTIVE(S): Dysfunction in gastric accommodation (GA) and emptying (GE) are major pathophysiological features of functional dyspepsia (FD). Mirtazapine, an atypical antidepressant, is widely used to treat FD, but the exact mechanism remains unclear. We aimed to investigate differences in GA, GE, and adverse events among healthy volunteers (HVs) before and after a four-week treatment with low-dose mirtazapine.

METHODOLOGY: This was a pilot, open-label, one-group pretest-posttest quasi-experimental study involving 12 asymptomatic HVs (6 females; 28.5±4.3yrs). Following an upper endoscopy and symptom evaluation using the Rome IV questionnaire, all participants were administered 15mg of mirtazapine (o.n.). GA test (250mL Ensure[®] Gold™; ~262kcal) was performed using 99mTc-pertechnetate hybrid SPECT/CT volumetry with semi-automated image segmentation, while GE test (standardized egg-white meal; ~225kcal) was done using ^{99m}Tc-sodium phytate scintigraphy with power-exponential modeling of the time-activity curve. Outcomes include: 1) fasting (FV) and postprandial volume (PV), accommodation (AV; Δpostprandial-fasting), and postprandial-fasting ratio (PFR); and 2) 4h global gastric retention, 10% lag phase (T_{lag10%}), and half-emptying time (T_{1/2}). Body mass index (BMI) was documented during each visit and pre-treatment run-in period. Data were reported as median ± median absolute deviation.

RESULTS: There were no significant differences in FV (114.2±28.5mL vs. 110.5±25.7mL), PV (420.3±43.2mL vs. 429.5±47.6mL), AV (288.0±24.8mL vs. 302.8±51.5mL), and PFR (3.42±1.04 vs. 3.76±0.46); all *P*>0.05. Likewise, no significant differences observed in %global retention (at 0.5h [93.3%±5.2% vs. 96.4%±5.4%; Δ=3.1%], at 1h [75.6%±12.1% vs. 74.7%±18.5%; Δ=0.9%], at 2h [35.8%±14.1% vs. 39.4%±26.8%; Δ=3.6%], at 3h [11.6%±8.4% vs. 15.9%±17.1%; Δ=4.3%], at 4h [2.4%±2.4% vs. 4.6%±5.8%; Δ=2.2%]), T_{1/2} (1.63±0.33h vs. 1.68±0.66h), and T_{lag10%} (0.63±0.25h vs. 0.59±0.33h); all *P*>0.05. The BMI of HVs was significantly increased after mirtazapine (pre: 22.0±3.7 to post: 23.1±3.6kg/m²; *P*=0.008).

DISCUSSION AND CONCLUSION(S): Among asymptomatic HVs, mirtazapine does not affect GA and GE, likely due to an intact gastric motor function. The BMI is increased after mirtazapine.

Keywords: Mirtazapine, antidepressive agents, gastric accommodation, gastric emptying, healthy volunteers

RE-EVALUATION OF MANOMETRY AND SYMPTOMS POST BOTOX INJECTION VERSUS STANDARD MEDICAL THERAPY FOR JACKHAMMER OESOPHAGUS (JE) IN HOSPITAL KL

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INTRODUCTION: The purpose of this case study is to investigate management of Botox injection versus standard medical management for Jackhammer oesophagus (JE) in term of Gastrointestinal Quality of Life Index (GIQDI) and symptoms (Eckardt score).

JE is an oesophageal motility disorder that is characterized by hypercontractile peristalsis. The prevalence of JE ranges from 0.42% to 9%, with most series describing a prevalence of 2% to 4%. Most cases are women, with mean age of 65.2 years. Causes and pathogenesis of JE remains unknown but suggest that it is a result of multiple conditions that likely precipitate increased excitation and abnormal inhibition of neuromuscular function. Treatment efficacy remains insufficiently studied. Eckardt score is used to assess severity of achalasia symptoms.

CASE STUDIES: We are comparing 2 cases of JE that had been treated in HKL. Both patients are male, with similar comorbid of DM, HTN and IHD. Both gentlemen presented similarly with dysphagia to both solid and liquid, with association with chest pain. OGDS done shows gastritis feature, JE features were diagnosed with manometry. Both gentlemen show minimal improvement with diltiazem and esomeprazole. Botox therapy was initiated.

RESULTS: Post BOTOX therapy, both patients show improvement in Eckardt score [4→1] and GIQDI[128], with marked improvement on chest pain relieved. One of the patients eventually undergo OGDS with dilatation with Rigiliflex balloon in view of persistent dysphagia. Repeated manometry on both patients is unremarkable.

CONCLUSION: Botox therapy had shown improvement in both Eckardt score, GIQDI as well as improvement in JE feature on manometry compared to lone standard medical therapy. Symptoms such as chest pain is more markedly improved post Botox therapy. This could be most likely explained by different pathophysiology for dysphagia, which could be beneficial to other approach such as surgical myotomy, balloon dilatation. More case studies needed to be done.

SYMPTOMATIC BRUNNER GLAND HYPERPLASIA: A RARE BENIGN LARGE DUODENAL BULB MASS

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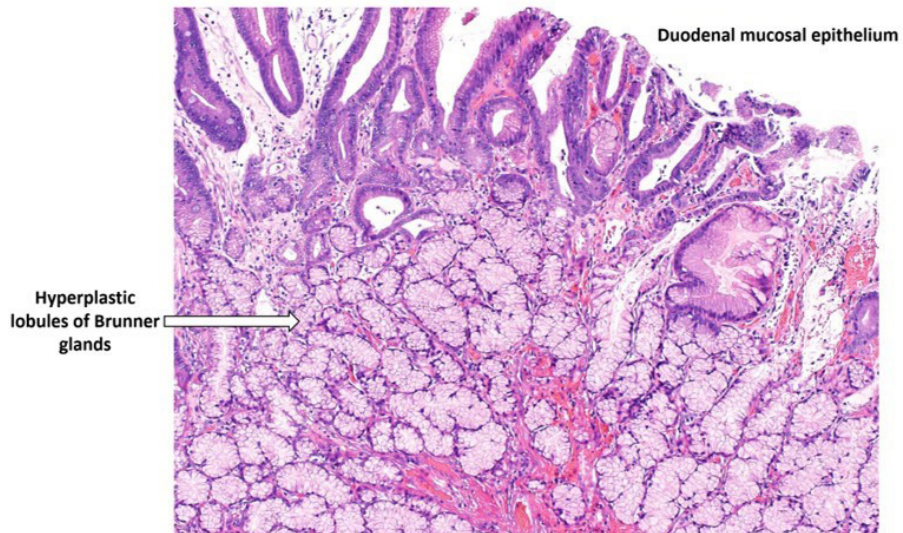
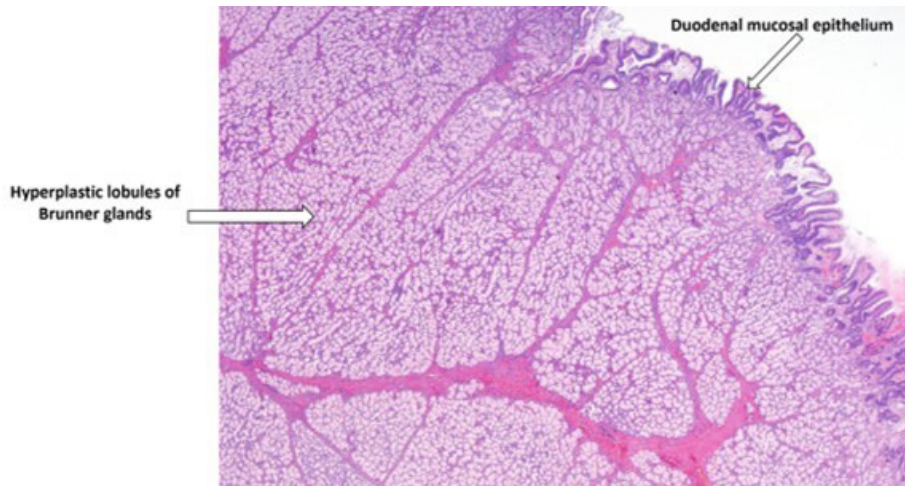
OBJECTIVE: To showcase a telescoping pedunculated Brunner's gland hyperplasia (BGH) in the duodenal bulb which causing symptomatic iron deficiency anemia and was successfully treated using snare cautery.

CASE PRESENTATION: 61 years old gentleman with hypertension and diabetes mellitus presented with 3 days history of melena and epigastric pain. Laboratory results revealed iron deficiency anemia with hemoglobin of 7.7 g/dL (MCV 78.1fL) and rest were unremarkable. The ensuing upper gastrointestinal endoscopy revealed gastritis, duodenitis and large benign looking polypoidal ulcerated duodenal mass post pyloric measuring 4 cm telescoping between the pylorus. This caused the partial obstruction of pylorus. The RUT was negative for *Helicobacter pylori*. The duodenal mass biopsies were consistent with Brunner's gland hyperplasia (BGH). Contrasted CT abdomen revealed elongated intraluminal mass at duodenal bulb without extraluminal mass or lymphadenopathy. The excision of the polyps measuring 43x20x20mm was performed using hot snare polypectomy (HSP) in a forward position with hemoclip placed prophylactically post snare cautery. The histopathological examination of the resected specimen confirmed Brunner's gland hyperplasia without evidence of malignancy. Colonoscopy was normal. He recovered well and was still under surveillance endoscopy.

RESULTS:

		Post HSP
Hemoglobin	7.7 g/dL	12.9 g/dL
MCV	78.1fL	80.6 fL
Iron	8.7 umol/L	
TIBC	60.1 umol/L	





DISCUSSION: BGH is extremely rare but generally benign and asymptomatic. Our case highlights the importance to recognise BGH as a potential lesion in duodenum causing overt bleeding and anemia.

HEPATITIS B FLARES IN PATIENT WITH HEMATOLOGICAL DISORDER POST CHEMOTHERAPY

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OBJECTIVE: Compliance to the oral antiviral could be difficult in a patient undergoing chemotherapy. The complication of mucositis post chemotherapy should not be regarded as a trivial issue. We highlighted a case of hepatitis B flare in a patient whom frequently defaulting from tenofovir due to grade 3 mucositis.

CASE PRESENTATION: A 33-year-old lady with e-Antigen negative chronic hepatitis B carrier and stage IVb intra-abdominal Burkitt's Lymphoma had complications of possible splenic venous tumour thrombus culminating 2 times gastric variceal bleeding. She received series of induction chemotherapy (RCHOP followed by HyperCVAD, DHEP and lastly R1R2) while continuing her tenofovir disoproxil fumarate (TDF). During the treatment course, she experienced complications of severe grade 3 mucositis, neutropenic sepsis and even hypovolemic shock during her gastric variceal bleed. She received histoacryl glue injection for her gastric variceal bleed uneventfully and successfully. Nonetheless, she breached the continuity of taking the daily tenofovir during the eventful periods. Her hepatitis B viral load took its own course from 7 million international unit to more than 1 billion international units. Her MELD score was 15, CPS B (scored 8) during her hepatitis B flare. She was promptly started the rescue therapy of entecavir 1 mg od and TDF 300 mg od. After strict adherence, she achieved HBV DNA suppression of more than 2 log. The viral suppression led to normalization of liver function test and her MELD reduced to 9. There was no lactic acidosis or kidney impairment. She managed to complete another reinduction of chemotherapy and waiting for another consolidation chemotherapy prior to autologous stem cell transplant.

RESULTS:

	07/05/2021 1	22/11/2021	06/04/2022 2	20/04/2022 2	24/05/2022 2	30/6/2022 2
HBV DNA viral load	7,610,520 IU/ml, 6.88	>1,000,000,000IU/ml, VL-LOG: 9.00	68,161,232 IU/mL, 7.83		2,861 IU/mL, 3.45	Pending
Total Bilirubin	4.92	16.00	42.81	109.00	13.00	9.91
Alanine Transaminase	9	45	324	443	60	13
AFP ng/mL		42		155		
MELD		10	15			9

<p>Ultrasound hepatobiliary on 20/4/2022</p>	<p>The liver is normal in size measuring 12.8 cm but its outline is irregular. No focal lesion.</p> <p>Spleen is enlarged measuring 12.3 cm. Ill-defined hypochoic lesion is seen at its lower pole which may represent tumour infiltration or metastasis.</p>
<p>Computed tomography on 25/4/2022</p>	<p>Previously aggressive left intraabdominal mass(20.2 x 18.6 x 20.6 cm) with extensive adjacent organ infiltration multiple intraabdominal lymphadenopathy/nodal metastases was smaller improving abdominal and pelvic ascites. Splenomegaly with unchanged splenic hypodense lesions likely due to lymphomatous infiltration.</p>

DISCUSSION: She experienced virological breakthrough in November 2021 due to her nonadherence to daily tenofovir disoproxil fumarate. She admitted the severe mucositis developed post chemotherapy hampered the adherence. The TDF was continued in view of its high genetic barrier benefits and less documented virological resistance. Unfortunately, she still missed her TDF quite frequently albeit being more compliant. She decompensated with biochemical breakthrough in April 2022 and her MELD score was 15. Hepatitis B flare was detected with abrupt rise of alanine aminotransferase (ALT) to more than 5 times upper limit of normal i.e. 324 iu/L. She received rescue therapy comprising entecavir 1 mg od and tenofovir disoproxil fumarate 300 mg od to halt further hepatocytolysis as well as hepatic decompensation. She received proper counselling, good oral care and oral hygiene reinforcement with mild fluoride toothpaste, avoidance of irritating hot and spicy food. With good mutual understanding and good oral care, her compliance of rescue therapy saw the improvement of her MELD and resolution of liver biochemical inflammation.

CONCLUSION: Severe oral mucositis post chemotherapy is clinically important and relevant to patient taking oral antiviral. Our case illustrated the importance to be holistic in treating this susceptible individual whom might need dose limiting or modification of chemotherapy besides treatment of oral mucositis.

DEMOGRAPHICS AND CHARACTERISTICS OF ENDOSCOPIC FINDINGS AMONG COVID 19 PATIENTS WITH UPPER GASTROINTESTINAL BLEEDING IN A SINGLE CENTRE

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BACKGROUND/AIMS: Covid 19 pandemic poses healthcare provision challenges in endoscopic suite. It is unclear whether it affects the endoscopic manifestation of upper gastrointestinal bleeding. This retrospective study was done to review demographic data, site of lesions and need of intervention for those lesions.

METHODS: OGDS reports of covid 19 patients with indication of upper gastrointestinal bleeding from March 2021 to April 2022 were reviewed. Data of 35 patients were then analysed.

RESULTS: Of the 35 patients, 8.6% (n=3) were female and 91.4% (n=32) were males. 31.4% (n=11) were below 50 years and 68.6% (n=24) were 50 and above. 34.3% (n=12) with lesions requiring endoscopic intervention, 34.3% (n=12) with lesions not requiring endoscopic intervention, 31.4% (n=11) has no significant stigmata of recent hemorrhage. Among subgroup requiring endoscopic intervention, 50% (n=6) are non variceal bleeding (NVUGIH), and 50% (n=6) are variceal bleeding (VUGIH). Among NVUGIH, 16.7% (n=1) is gastric and duodenal angiodysplasia requiring argon plasma coagulation, 50% (n=3) are duodenal F2a ulcer requiring thermoablation, 16.7% (n=1) is gastric F2a ulcer requiring hemoclip, and 16.6% (n=1) is cameron's ulcer requiring hemoclip. Among VUGIH, 100% (n=6) are esophageal varices requiring banding. Data shows differing distributions of NVUGIH and VUGIH as compared to previously published HKL data by Lakhwani et al, which shows respective distributions of 89.1% (n=114) and 10.9% (n=14).

CONCLUSION: Lower proportion of NVUGIH among covid 19 patients raises hypothesis on whether prothrombotic state of covid 19 is a protective factor of NVUGIH. Studies with large sample size are needed to establish significance.

PARADOXICAL AUTOIMMUNITY - "AUTOIMMUNE HEPATITIS IN PRIMARY IMMUNODEFICIENCY"

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INTRODUCTION: Primary immunodeficiencies (PID) comprise a diverse group of clinical disorders with varied genetic defects. A substantial proportion of PID patients may paradoxically develop autoimmune features and yet are prone to infections as a consequence of compromised immunity. We report a 42-year-old gentleman with an underlying signal transducer and activator of transcription 1 (STAT1) mutation primary immunodeficiency diagnosed with autoimmune hepatitis and started on corticosteroid.

METHOD: A 42-year-old Chinese gentleman with a history of primary immunodeficiency syndrome was diagnosed in 1990. He also had multiple admissions for recurrent mucocutaneous candidiasis, a suppurative lung disease that caused cavitation and bronchiectasis, and it later worsened by non-tuberculous mycobacterium (NTM) lung abscess infection in 2019.

Raised of transaminase levels were observed throughout NTM treatment, and the elevation persisted even after the treatment was discontinued for more than 6 months. In view of STAT 1 immunodeficiency gain-of function may be associated with autoimmune disease, hence autoimmune hepatitis was suspected. The diagnosis was supported by a revised autoimmune hepatitis score of 16 which laboratory measurement showed positive ANA, raised in serum IgG, negative viral hepatitis markers, normal imaging and liver biopsy with interface hepatitis, and predominantly lymphoplasmocytic infiltrate

DISCUSSION: The prevalence of autoimmunity in Primary immunodeficiencies (PID) is estimated at 1 in every 50,000 people worldwide. The relation between autoimmune disorders and PID may occur in up to 25% of patients, demonstrating the disease's heterogeneity. Gastrointestinal manifestations are common, with a prevalence ranging from 20% to 60% while liver involvement is seen in 10% of patients with PID. Corticosteroids are the mainstay of AIH therapy, with or without immune modulators.

CONCLUSION: Diagnosing of autoimmune hepatitis in patients with primary immunodeficiency is challenging and should entail a multidisciplinary approach involving clinical immunologists, gastroenterologists, infectious disease physicians, and pulmonologists to avoid late complications.

A SINGLE CENTRE STUDY ON THE ETIOLOGIES AND RISK FACTORS OF PATIENTS WITH ACUTE VARICEAL BLEEDING

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OBJECTIVE: To determine the etiologies and risk factors of patients who presented with acute variceal bleeding, and failure rate of therapy for acute variceal bleeding.

METHODOLOGY: A retrospective study reviewing the medical records of patients who presented with variceal bleeding in Hospital Sultanah Bahiyah, Alor Setar, Malaysia, over a 2 year period from 1 July 2020 until 30 June 2022. All underwent upper GI endoscopy within 12 hours of presentation.

RESULTS: A total of 86 patients who presented with variceal bleeding, with a total of 106 episodes of acute variceal bleeding, were found within the study period. Chronic hepatitis C was the commonest etiology leading to variceal bleeding (31.4%), followed by non-alcoholic steatohepatitis (27.9%) and chronic hepatitis B (12.8%). The majority of patients presenting with variceal bleeding were Child-Pugh class B (58.1%), followed by Child-Pugh A (19.8%) and Child-Pugh C (18.6%). 15.1% of the patients also had hepatocellular carcinoma. 15.1% of them had recurrent bleeding within 1 year; of these, the highest proportion was due to chronic hepatitis C (46.2%), and were Child-Pugh B (46.2%). There were only 2 episodes of failure of endoscopic therapy for variceal bleeding (0.02%), and only 1 episode of early rebleeding.

DISCUSSION: Chronic hepatitis C was the commonest etiology of variceal bleeding, with NASH coming close at second place. The majority of patients who had variceal bleeding were Child-Pugh B. A significant proportion of patients who bled also have HCC. Chronic hepatitis C was the commonest etiology of recurrent variceal bleeding. The failure rate of therapy for acute variceal bleeding was low.

CONCLUSION: Screening for hepatitis C and NASH in populations at risk, followed by early treatment, is important to reduce incidence of variceal bleeding. Patients with decompensated cirrhosis or HCC should undergo early endoscopic surveillance for varices, which should be prophylactically treated if present.

AUDIT OF THE INVESTIGATION OF IRON DEFICIENCY ANEMIA IN A TEACHING UNIVERSITY HOSPITAL

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OBJECTIVE: Patients with iron deficiency anemia are frequently referred to gastroenterologists to rule out gastrointestinal (GI) pathologies. Except for pre-menopausal women younger than 45 years old, it is recommended that all patients have an upper and lower GI tract examination as a first-line GI investigation. The primary goal of this audit was to determine how thoroughly patients referred to our unit at Hospital Canselor Tuanku Muhriz were investigated between July 2021 and June 2022.

METHODOLOGY: Patients: Over 12 months, we reviewed the case notes of patients who had a gastroscopy for anemia. We defined iron deficiency anemia as hemoglobin levels below the reference range combined with either a low ferritin level or an iron/TIBC ratio of less than 10%.

RESULTS: A total of 266 patients were examined endoscopically for anemia, and 111 (58 men and 53 women) met the inclusion criteria for IDA. The group's median age was 68 (range: 23 to 88), and there were 53 women (47.7%). There were six female patients under the age of 45 in group A, and 105 patients in group B, which included all males and females >45 years old.

All of the patients in Group A met the standard set by the BSG guideline by having a gastroscopy.

In group B, 27 patients (25.7%) had upper and lower gastrointestinal examinations. Gastroscopy revealed peptic ulcer disease in 59 patients (56.19%) and upper GI cancer in four patients (3.81 percent). Twenty patients in Group B who underwent lower gastrointestinal investigations were found to have gastrointestinal disorders (16 colonic polyps, one colorectal cancer, two colonic ulcers, and one hemorrhoid).

DISCUSSION: Overall, gastroscopy and colonoscopy yield rates were 66.7 percent and 74.2 percent, respectively. Dietary iron deficiency was discovered in 12 patients (or 10.8 percent). Endoscopically, the cause of iron deficiency was identified in 96 patients (86.5 percent), five of whom had cancer.

Conclusion: Given the high yield of both OGDS and colonoscopy in our center, it is recommended to offer bidirectional endoscopy to postmenopausal women and men with iron deficiency anemia. Except for young patients with other plausible reasons for iron deficiency anemia, this approach is preferred over iron replacement therapy alone.

Keywords: audit; investigation; gastroscopy, colonoscopy, iron deficiency anemia

EFFICACY, SAFETY AND PERSISTENCE OF USTEKINUMAB VERSUS INFLIXIMAB IN BIONAÏVE PATIENTS WITH MODERATE TO SEVERE CROHN DISEASE PATIENTS: A REAL WORLD EXPERIENCE

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BACKGROUND AND AIM: Ustekinumab was licenced for treatment of moderate to severe Crohn disease (CD) in Malaysia since March 2020 while Infliximab is a well-established treatment for moderate to severe CD. Our objective is to look at real-world data on efficacy, safety and persistence of Ustekinumab versus Infliximab in our population.

METHODS: This was a retrospective, single-centre study conducted in a tertiary centre in Malaysia where we recruited all biologic naïve CD patients who were treated with Ustekinumab or Infliximab for at least 3 month duration. Demographic, clinical data and type of biologic therapy used were recorded. Clinical remission at 3-month, 6-month and 1-year were analysed as well as adverse event and persistence of therapy.

RESULTS: A total of 73 patients were recruited: 19 from Ustekinumab cohort and 54 from the Infliximab cohort. There were no significant differences in terms of demographics, disease location and behaviour at diagnosis between the two cohorts. Clinical remission for Ustekinumab cohort were 63.2%, 63.2% and 73.3% at 3-month, 6-month and 1-year compared to Infliximab cohort 64.8%, 74.1% and 77.8% at 3-month, 6-month and 1-year. 3 (5.5%) patients developed infusion reaction, 1 (1.8%) patient developed tuberculosis, 1 (1.8%) patient developed psoriasiform dermatitis, 1 (1.8%) patient developed shingles in Infliximab cohort while no adverse event recorded in Ustekinumab cohort. Persistence was 78.9% and 61.1% for Ustekinumab and Infliximab respectively at 2-year but this was not statistically significant.

CONCLUSION: Our early real world data shows that Ustekinumab is efficacious and safe in inducing and maintaining remission of CD and may have a better persistence as compared to Infliximab therapy.

Table 1

Types of biologics	Infliximab (n=54)	Ustekinumab (n=19)	p-value
Age (y), mean ± SD	29.0 (9.0)	26.0 (16.0)	.188
Gender, n(%)			.06
Male	36 (66.7)	8 (42.1)	
Female	18 (33.3)	11 (57.9)	
Ethnicity, n(%)			.779
Malay	12 (22.2)	3 (15.8)	
Chinese	18 (33.3)	6 (31.6)	
Indian	24 (44.4)	10 (52.6)	
Disease Duration (y), median (IQR)	7.0 (7.0)	2.0 (2.0)	<.001
Disease Location, n(%)			.068
Ileal	15 (27.8)	9 (47.4)	
Colon	20 (37.0)	1 (5.3)	
Ileocolon	17 (31.5)	8 (42.1)	
Isolated upper GI	2 (3.7)	1 (5.3)	
Disease Behaviour, n(%)			
B1: Non-penetrating Non-Strictureing	36 (66.7)	13 (68.4)	.175
B2: Strictureing	7 (13.0)	5 (26.3)	
B3: Penetrating	11 (20.4)	1 (5.3)	
Biologics Duration (m), median (IQR)	31.0 (41.0)	16.0 (14.0)	.004
Clinical remission at 3-month, n(%)	35 (64.8%)	12 (63.2%)	.897
Clinical remission at 6-month, n(%)	40 (74.1%)	12 (63.2%)	.366
Clinical remission at 1 year, n(%)	42 (78.8%)	11 (73.3%)	.718
Total adverse event, n(%)	6 (11.1%)	0 (0.0%)	.129
Tuberculosis, n(%)	1 (1.8%)	0 (0.0%)	
Infusion reaction, n(%)	3 (5.5%)	0 (0.0%)	
Psoriasiform dermatitis, n(%)	1 (1.8%)	0 (0.0%)	
Shingles, n (%)	1 (1.8%)	0 (0.0%)	
Persistence at 2-year, n(%)	33 (61.1%)	15 (78.9%)	.344

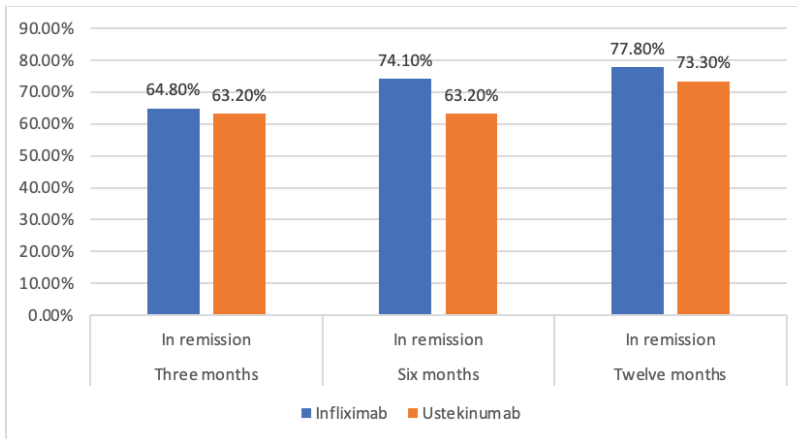


Figure 1 : Percentage of patients in clinical remission with Infliximab and Ustekinumab treatment

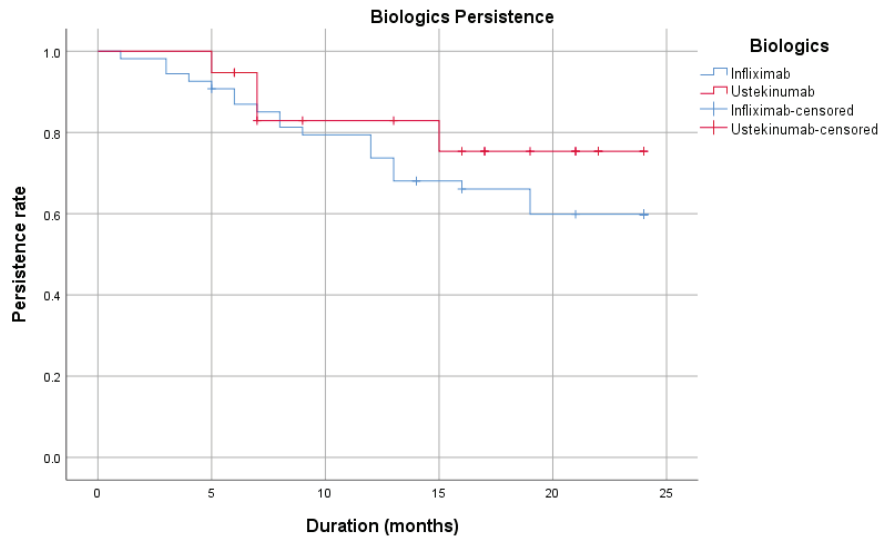


Figure 2: Persistence of Ustekinumab and Infliximab

THE USE OF NON-INVASIVE TESTS COMPARED WITH HISTOLOGICAL FIBROSIS STAGE IN PREDICTING LIVER-RELATED EVENTS IN METABOLIC DYSFUNCTION-ASSOCIATED FATTY LIVER DISEASE

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OBJECTIVE: To study the use of non-invasive tests (NITs) compared with histological fibrosis stage in predicting liver-related events in adults with metabolic-dysfunction-associated fatty liver disease (MAFLD).

METHODOLOGY: This is a single-centre prospective study of a well-characterized cohort of biopsy-proven MAFLD patients who were followed for liver-related events.

RESULTS: The data for 202 patients were analyzed (mean age 53.7 ± 11 years old, male 47.5%, non-alcoholic steatohepatitis 76.7%, advanced liver fibrosis 27.3%). The median follow-up interval was 7 years (range 1 - 9 years). Seven liver-related events (ascites, n = 1; hepatocellular carcinoma, n = 1; variceal bleeding, n = 1; gastroesophageal varices, n = 4) occurred in 2.5% (5/202) of patients. LSM and histological fibrosis stage were good predictors of liver-related events with area under receiver operating characteristic curve (AUROC) of 0.88 and 0.89, respectively, while NFS was fair with AUROC of 0.78. FIB-4 and APRI performed poorly with AUROC of 0.63 and 0.56, respectively. The optimal cut-off for each of the NITs (based on Youden index), and its sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) for liver-related events are shown in Table 1. Using the 10 kPa cut-off, the sensitivity, specificity, PPV and NPV of LSM for liver-related events were 100%, 65.5%, 6.7% and 100%, respectively. Using the 15 kPa cut-off, the corresponding values were 60%, 84.3%, 8.8% and 98.8%, respectively.

CONCLUSION: LSM, but not simple blood-based fibrosis scores, appeared to be as good as histological fibrosis stage in predicting liver-related events in MAFLD patients.

Table 1 The optimal cut-off for each of the noninvasive tests (based on Youden index), and its sensitivity, specificity, positive predictive value, and negative predictive value for liver-related events

	Histological fibrosis stage	LSM	APRI	FIB-4	NAFLD fibrosis score (NFS)
AUROC	0.89 (0.81-0.96)	0.88 (0.78-0.98)	0.56 (0.28-0.83)	0.63 (0.39-0.87)	0.78 (0.66-0.91)
Optimal Cut-off	F3	11.1 kPa	0.81	0.89	-0.930
Sensitivity	100%	100%	40%	100%	100%
Specificity	75%	70%	89%	36%	62%
PPV	9%	8%	9%	4%	6%
NPV	100%	100%	98%	100%	100%

LSM, liver stiffness measurement; APRI, aspartate aminotransferase to platelet ratio index; FIB-4, fibrosis-4 index; NAFLD, nonalcoholic fatty liver disease; AUROC, area under the receiver operating characteristic curve; 95% CI, 95% confidence interval; PPV, positive predictive value; NPV, negative predictive value

PLUG-ASSISTED RETROGRADE TRANSVENOUS OBLITERATION FOR THE TREATMENT OF GASTRIC VARICEAL HEMORRHAGE

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Bleeding from gastroesophageal varices is a common complication in patients with portal hypertension. Over the decades, multiple radiological interventions such as transjugular intrahepatic portosystemic shunt (TIPS) and balloon-occluded retrograde transvenous obliteration of varices (BRTO) have become common practice as a minimally invasive procedure to reduce portal venous pressure and prevent variceal hemorrhage. Vascular plug-assisted retrograde transvenous obliteration (PARTO) is a modified BRTO procedure which has shown similar treatment efficacy in treating gastric varices.

Here, we report a case of a 81-year-old male patient with underlying ischemic heart disease and end stage renal disease currently on regular dialysis, presented with recurrent episodes of upper gastrointestinal bleed (UGIB) since 2017. Initial oesophagogastroduodenoscopy (OGDS) revealed a peptic ulcer disease. Unfortunately, he was re-admitted again in 2021 for UGIB. Repeated OGDS showed a grape like pedunculated mass at the fundus with antral gastritis. CTA mesenteric shows gastroesophageal and splenic hilum varices with splenorenal shunt with no evidence of active bleeding. In view of his risk factors and recurrent UGIB patient was counselled and agreed for vascular Plug Assisted Retrograde Transvenous Obliteration (PARTO).

PARTO was performed by our interventional radiologist team under elective setting. The procedure was performed under sedation with IV Fentanyl 50mg and IV Midazolam 2mg. Catheter access achieved via right common femoral vein and right internal jugular vein. The vascular plug was deployed to the distal splenorenal varices and additional emboli material which is gelfoam slurry 30cc mixed with contrast medium was further injected via catheter with intermittent saline injection into the splenorenal varices. Post embolization showed almost complete embolization of the splenorenal varices. Patient was seen in the clinic 3 months after the procedure and repeated CTA mesenteric reveals resolution of the splenorenal varices with no procedure related complication and patient haemoglobin was static on subsequent follow up.

In conclusion, multiple co-morbid patients with portal hypertension had higher mortality and morbidity and choosing the right approach and treatment for this group of this patients is important to reduce the risk of related procedure complications.

KASABACH-MERRIT SYNDROME AND ADULT HEPATIC EPITHELIOID HEMANGIOENDOTHELIOMA: AN UNUSUAL ASSOCIATION

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Kasabach-Merrit syndrome (KMS) is very rarely observed in adults associated with visceral hemangiomas. Hepatic epithelioid hemangioendothelioma (HEHE) is a very rare clinical entity with an intermediate malignant potential and a mortality rate of 20-30%.

Here we report a case of a 58-year-old gentleman with underlying type II diabetes mellitus, NASH induced liver cirrhosis (Child's Pugh A) and history of recent transarterial chemoembolization (TACE) for hepatic hemangioma, presented to us with complain of right hypochondric pain, orthopnoea and cough. A CT Abdomen showed worsening hypervascular hepatic lesions measuring 15.3cm x 10.6cm x 14.5cm in the arterial and portal phase with no fill-in enhancement during the delayed phase. There was a drop in haemoglobin to 6.2g/dl with low platelet count and high fibrin degradation products. OGDS show oozing from the ampulla and bleeding most likely from the liver. We postulated that the patient likely had a vascular tumour either giant hemangioma or hemangioendothelioma (HEHE) with Kasabach Merritt Syndrome with multiple metastatic deposits over bilateral lung fields as evidence of enlarging hemangioma with severe thrombocytopenia. A MDT discussion done and noted the patient was deemed not suitable for surgery and TACE due to active angiogenesis and thrombocytopenia. However, radiotherapy was an option with the risk of liver failure. No role for vascular endothelial growth factor (VEGF) angiogenesis as the main aim was to secure the bleeding. Subsequently he received haemostasis radiotherapy and discharged home subsequently. Unfortunately patient was readmitted after a month with decompensated liver failure secondary to hospital acquired infection and passed away.

In conclusion, the appropriate treatment for HEHE consists in surgical removal of the tumor and even liver transplantation. However in our patient, due to the clinical characteristics of the patient, and the size of the tumor, only supporting therapy was given. Taking into account that HEHE has no specific clinical manifestations, as well as its lacking of typical imaging and its uncertain prognosis, we consider that a presumptive diagnosis of HEHE is difficult to confirm without histology but with no value in predicting clinical outcome.

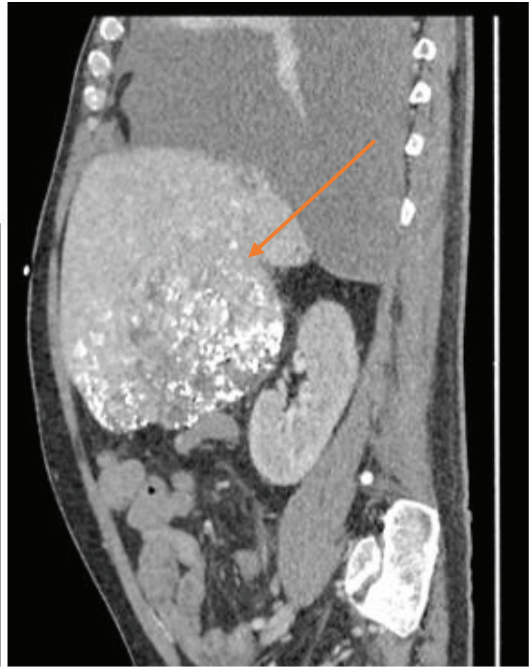
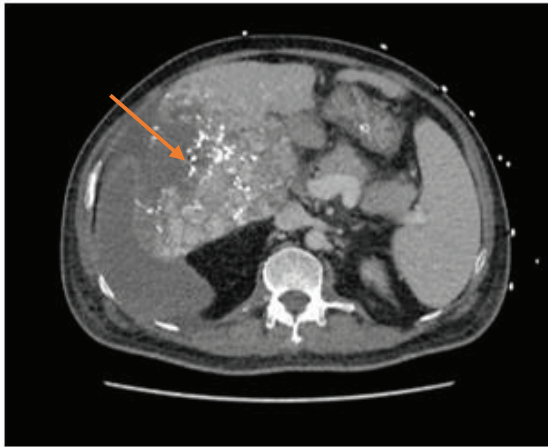


Fig 1 : The axial view of CT Thorax at this point of time showed right sided haemothorax.

The sagittal view of CT Abdomen show a small defect is seen at the right diaphragm and adjacent liver cap suspicious of rupture.

PATIENTS' PERSPECTIVES ON BOWEL RESECTION FOR INFLAMMATORY BOWEL DISEASE: A PILOT QUALITATIVE STUDY

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AIM: To explore factors influencing patients' decision about bowel resection surgery for patients with inflammatory bowel disease (IBD).

METHODS: A qualitative study design was conducted between April-July 2022 using semi-structured individual in-depth interviews. Patients with IBD who were advised for bowel resection were recruited from the IBD clinic at University Malaya Medical Centre. Purposive sampling was used to recruit patients based on gender, age, ethnicity and education level. Interviews were transcribed verbatim and analysed thematically.

RESULTS: A total of six patients participated; 4 males and 2 females; age range 21-45 years. Three had undergone bowel resection. The following themes emerged:

- 1) Rapport/trust in Healthcare Professionals (HCPs). Patients struggled to decide when HCPs could not address uncertainties about surgical outcomes. Consultations with experienced doctors helped them understand surgery more holistically. Cancer risk also influenced some to go for surgery.
- 2) Impact on quality of life/social activities: Some agreed to surgery because their disease significantly affected their work/leisure while some were reluctant as they perceived surgery would negatively impact their social activities eg limitation to their attire from having a stoma
- 3) Stoma-related concerns. Stoma concerns included inconvenience of replacing the bag outer layer, fear of leak or perforation of the bag, and perceived distortion to their 'normal' anatomy.
- 4) Time commitments Some patients were reluctant to undergo surgery due to family commitments such as breastfeeding or work commitments and taking medical leave which may impact their job/career.
- 5) External sources/influence: Family often advised them to try traditional medicine instead of surgery, while talking to other patients who had experienced similar surgery gave them confidence to undergo surgery.

DISCUSSION AND CONCLUSION: Patient's decisions about bowel resection were influenced by encounters with doctors, lifestyle/stoma-related concerns and information from family and peers. These should be explored in decision-making related to bowel resection.

NARROW-BAND IMAGING WITH MAGNIFICATION VERSUS WHITE LIGHT ENDOSCOPY IN THE ASSESSMENT OF GASTRIC LESIONS

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INTRODUCTION: Gastric cancer is the sixth most commonly diagnosed cancer and accounts for the third highest number of cancer-related deaths globally. Early detection through endoscopy may enable minimally invasive treatment and hence better outcomes. This study aims to compare the efficacy of narrow-band imaging with magnification (M-NBI) to white light endoscopy (WLE) in assessing gastric lesions.

METHOD: We performed a retrospective analysis of prospectively collected data in our repository consisting of all suspicious gastric lesions comprising of polyps, ulcers, nodules, and folds, evaluated with WLE and M-NBI using the Olympus GIF-HQ190 gastroscopes. For M-NBI characterization, we used the VS criteria consisting of regular/irregular microvasculature patterns, regular/irregular microsurface patterns, and the presence/absence of demarcation lines. These were then either biopsied or removed endoscopically and correlated with final histopathology.

RESULTS: 176 lesions (56 neoplastic and 120 non-neoplastic) in 174 patients were analyzed. The yield of WLE in diagnosing gastric lesions was 39.2% (69/176), with a prediction of 7 neoplastic and 62 non-neoplastic lesions. M-NBI could interpret all 176 lesions accurately and further clarify the remainder of 107 of 176 lesions (60.8%) that WLE could not diagnose. With M-NBI, the sensitivity (Sn), specificity (Sp), positive predictive value (PPV), negative predictive value (NPV) and accuracy in predicting neoplastic gastric lesions were 94.4%, 99.4%, 94.4%, 99.4%, and 98.9% respectively.

CONCLUSION: M-NBI was markedly superior to WLE. The technology can accurately predict histology with high sensitivity and NPV and may help prevent unnecessary biopsies or resection of benign gastric lesions.

CASE SERIES: BENEFIT OF COMPREHENSIVE ENDOSCOPIC DILATATION PROGRAM WITH STEROID INJECTION FOR REFRACTORY BENIGN OESOPHAGEAL STRICTURE - A HISTORICAL COMPARISON

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OBJECTIVE(S): Endoscopic oesophageal dilatation is the mainstay of treatment for benign oesophageal stricture. However, some patients are refractory to it and require repeated dilatations. The objective of the study was to evaluate the efficacy of comprehensive program of oesophageal dilatation with triamcinolone injection in 4 patients with refractory benign stricture in Hospital Kuala Lumpur (HKL).

METHODOLOGY: The data of patients who had undergone oesophageal dilatation with intralesional triamcinolone injection were being retrieved from electronic records. A total of 4 out of 20 patients were diagnosed with refractory stricture and were given triamcinolone injections. The number of dilatations required, both pre and post treatment was examined, and post procedure symptom-free period was assessed.

RESULTS: A total of 4 refractory patients had undergone oesophageal dilatation with triamcinolone injection in HKL from September 2020 to June 2022. The number of dilatations needed before triamcinolone injections were ranging from 3 to 5 dilatations. 3 out of 4 patients needed 2 triamcinolone injections, while the remaining 1 patient needed only once. 2 of the patients went into remission and the other 2 patients required 1 more session of oesophageal dilatation after 1 month post triamcinolone injection. All patients remained symptom-free for more than 6 months till date. No adverse reaction was recorded from the therapy.

DISCUSSIONS: Intralesional triamcinolone injection(s) in addition to endoscopic dilatation is safe and effective way to decrease stricture rate and to reduce endoscopic dilatation sessions.

CONCLUSIONS: A bigger sample size and more patient data needs to be examined in order to get a statistically significant result.

PERORAL ENDOSCOPIC MYOTOMY (POEM) - A SINGLE CENTRE EXPERIENCE

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OBJECTIVE(S): Achalasia is an uncommon disorder, manifested by fail relaxation of the lower esophageal sphincter (LES), associated with impairment in esophageal peristalsis. Peroral endoscopic myotomy (POEM) is a relatively new and minimally invasive procedure, with comparable results to Heller myotomy, which is the standard surgical treatment for achalasia. We aim to describe the clinical outcome data from our institution's POEM experience.

METHODOLOGY: Treatment-naive and treatment-experience achalasia patients that were candidates for POEM were included within the time frame from 2020 to 2022. Clinical success was defined as a reduction in Eckardt Symptom (ES) score of 3 or more and freedom from reintervention for achalasia. The data of patients who had undergone POEM were being retrieved from clinic records. The pre and post procedure ES, magnitude of weight gain as well as post procedure side effects were being assessed.

RESULTS: A total of 14 patients had undergone POEM in our centre. The mean pre-POEM ES was 6.36, whereas the mean post-POEM ES was recorded at 1. The average weight gain achieved post-POEM were noted to be 4.3 kilograms. 4 out of 14 patients had post procedure reflux symptoms, whereby 3 of them claimed to be mild and manageable, only 1 out of total 14 patients required treatment with proton pump inhibitor. All patients had short-lived chest pain post-POEM, which was well-controlled after being given short term intravenous analgesia.

DISCUSSIONS: POEM is a safe and effective way to treat achalasia, with minimal side effects recorded from our cohort of patient. It provides shorter post procedure hospital stay with a good post procedure outcome.

POST COVID-19 LOCKDOWN ACUTE LIVER INSULT DATA REGISTRY. SINGLE CENTRE EXPERIENCE

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BACKGROUND: Following the return of our hybrid hospital status in October 2021, we observed a surge in admissions for acute liver insults defined as ALT and/or AST level increase > 5x upper limit normal (ULN). Here we study all non COVID-19 consecutive cases fulfilling the above criteria and shed light on the outcome, etiology and predictors of mortality.

METHODOLOGY: This was a prospective single centre observational study looking at all patients fulfilling acute liver insult diagnosis irrespective of etiology and anytime during the clinical course of admission between December 2021 to June 2022. The comorbidities, length of stay, symptoms, laboratory parameters at admission, peak and discharge, imaging, treatment, outcome of hospitalisation and vaccination history were obtained. A descriptive analysis was done to obtain the whole numbers and percentages of the different categories being studied. We also conducted a univariate and multivariate binary logistic regression analysis with the outcome of hospitalization to determine predictors of mortality.

RESULTS:

Altogether, 103 patients [57 males] were enrolled, amongst them 51.5% having co-morbidities and 21.4% having a previous confirmed COVID-19 infection. 25 patients with established Chronic Liver Disease (CLD) with 64% amongst this group having established cirrhosis and 8.6% presented with acute decompensation. The most common etiology of this study was pancreaticobiliary (24%) followed by Acute Viral Hepatitis (15%) of which 87.5% from Hepatitis B. An in-depth description of etiology (table 1) and outcome (table 2) is shown below.

A Univariate binary regression analysis yielded factors such as age, presence of any comorbidities, retroviral disease, length of stay, INR on admission, Bilirubin on admission, Albumin on admission, Urea and creatinine at peak and Hb on admission that are favourable to be included into the multivariate analysis. From the final analysis done, we found that INR on admission ($p=0.049$) and length of stay was the only significant factors ($p=0.04$) that affected the outcome of mortality. The rest of the variables were deemed to be confounders (table 3).

CONCLUSION: This concluded that an abnormal INR at admission and a longer hospital stay deemed higher rates of mortality. For every 1 day increase in length of admission, the odds of mortality increased by 1.4 times.

TABLE 1

ETIOLOGY

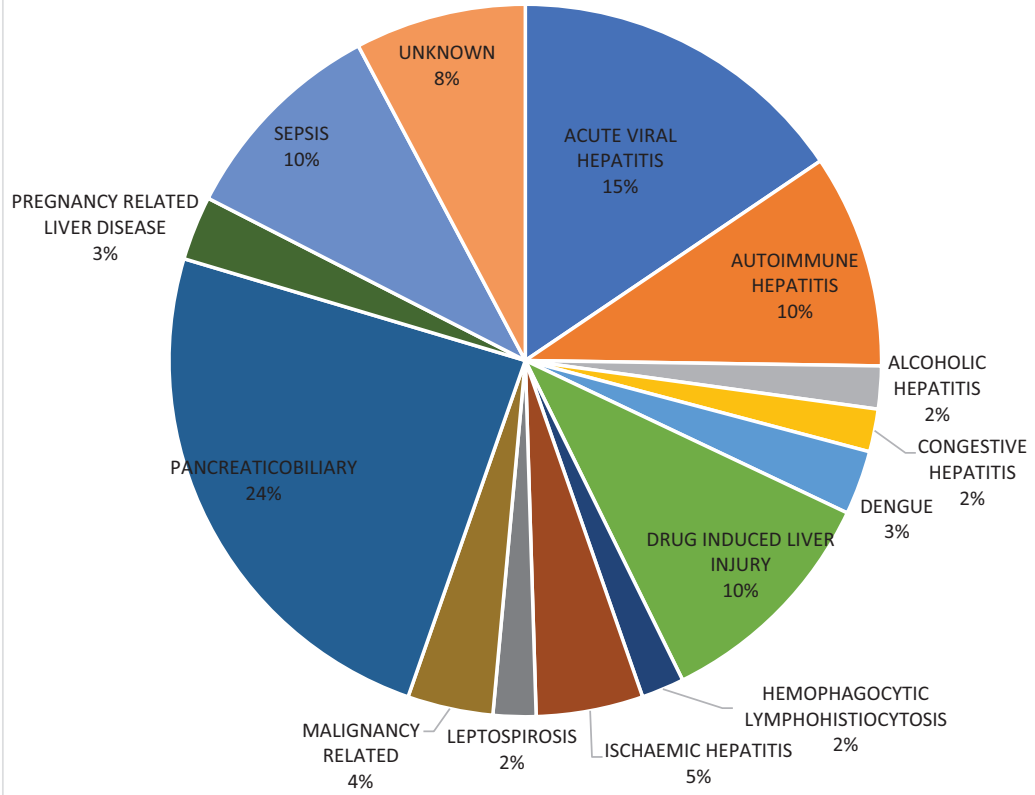


TABLE 2

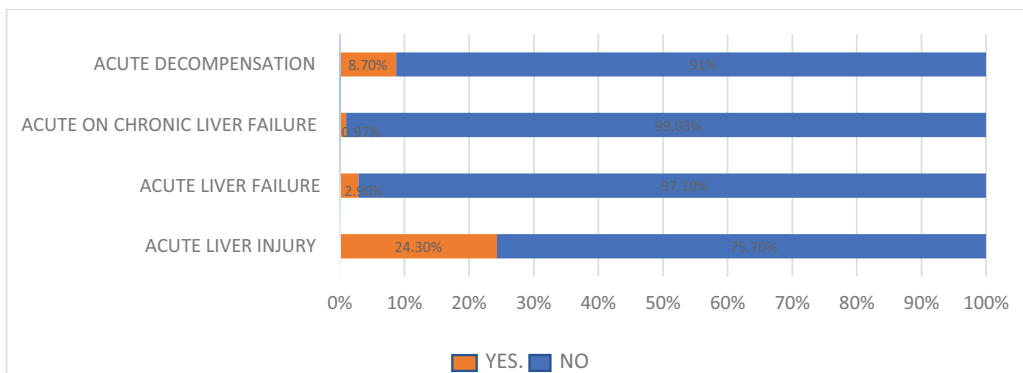


TABLE 3

Multivariate Analysis

Variables	Significance
AGE	.337
Comorbidity	.405
Retroviral Disease	.203
Length Of Stay (days)	.036
INR @ Admission	.049
BILIRUBIN @ Admission	.777
ALBUMIN@ Admission	.959
UREA @ Peak	.213
CREATININE@ Peak	.444
HEMOGLOBIN @ Admission	.723

IMPACT OF EARLY VERSUS LATE USE OF BIOLOGIC THERAPY ON CUMULATIVE SURGICAL RATES IN PATIENTS WITH IBD

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OBJECTIVE: A treat-to-target therapy in IBD by the early initiation of biologic therapy may impact disease progression and avoidance of surgical-related events. This study aims to identify differences in surgical rates between patients who received early versus late biologic therapy.

METHODOLOGY: This was a retrospective study from the UMMC IBD database from January 2009 until January 2022. All biologic experienced patients were included. The time of IBD diagnosis, the time of initiation of biologic therapy from disease onset, the duration of biologic therapy and the time to surgery were collected. Kaplan-Meier curve was used to determine the surgical survival rate with a significant p-value < 0.05.

RESULTS: The study included 100 patients bionative patients with Crohn's disease of which n=34, 34% had penetrating and/or stricturing disease and (n=66, 66%) had non-stricturing non-penetrating disease Patients received Infliximab (n=57, 57%), Ustekinumab (n=16, 16%), Vedolizumab (n=17, 17%) and Adalimumab (n=10, 10%).

However, 14% patients had a diagnosis of IBD post-surgery. 69.4% (n=52) patients received early biologic therapy (<2 years from diagnosis) and 39.6% (n=34) patients received late biologic therapy.

Cumulative survival surgical rates at 1, 3 and 5 years in the early biologic group were 95%, 90% and 80% (p=0.382) and 85%, 80% and 75% in the late biologic group.

CONCLUSION: Although the overall surgical rates were low in patients on biologic therapy, our study failed to show that early biologic therapy had lower cumulative surgical rates probably due to small numbers.

ENDOSCOPIC BAND LIGATION FOR REFRACTORY GASTRIC ANTRAL VASCULAR ECTASIA: A CASE REPORT

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CASE REPORT: The use of endoscopic band ligation (EBL) for refractory gastric antral vascular ectasia (GAVE) has shown encouraging results. We report a case of a 61-year-old lady with end stage renal disease (ESRD) who underwent diagnostic upper gastrointestinal endoscopy for evaluation of her severe anaemia i.e., haemoglobin of 6.5 g/dL. She had GAVE and treatment with argon plasma coagulation (APC) was performed. Subsequently, over the course of the next 12 months, patient experienced repeated reductions in haemoglobin to <8 g/dL which was attributed to the recurrence of the GAVE and APC was applied on four occasions and following the last application, patient developed abdominal pain. The patient's GAVE and anaemia recurred and as it was refractory to APC, EBL was performed. Since then, the EBL was repeated four times over the course of five months with increasing intervals between each procedure. As a result, the GAVE was resolved and the haemoglobin level has remained > 8g/dL and patient has avoided the need for further repeated endoscopic therapy or blood transfusion.

DISCUSSION: APC is the most widely used ablation method for GAVE. However, emerging data has shown that EBL can achieve clinical and endoscopic success in eradicating GAVE in both treatment naïve and APC-resistant patients.

CONCLUSION: EBL is a safe and effective therapy for refractory GAVE.

GASTROINTESTINAL AMYLOIDOSIS: A RARE CAUSE FOR UPPER GASTROINTESTINAL BLEED

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CASE REPORT: We report a case of a 61-year-old male who presented with haematemesis and melaena. Two weeks prior to that, he underwent a percutaneous coronary intervention and was on dual antiplatelet therapy. Urgent endoscopy revealed a large exophytic mass with blood clots in the proximal stomach. Haemostatic spray was applied, and a computed tomography (CT) scan confirmed the presence of an enhancing lesion in the proximal stomach. Subsequently patient underwent a positron emission tomography (PET) scan which revealed a hypermetabolic lesion in the stomach. Patient was counselled to undergo gastrectomy by the surgical team, based on the working diagnosis of a bleeding gastric tumour. Patient opted for a second opinion in another centre where he underwent serial upper gastrointestinal endoscopy, CT, and PET scan all of which confirmed spontaneous resolution of the lesion and histopathological evaluation of the gastric biopsy was reported as amyloidosis. Patient then came to our centre for re-evaluation six months later. Serum electrophoresis detected the presence of a monoclonal gammopathy, and a bone marrow evaluation was negative for multiple myeloma. Upper gastrointestinal endoscopy revealed pangastritis and duodenitis; and lower gastrointestinal endoscopy found normal mucosa. Biopsy from the stomach, D1, D2, ileum, right colon, left colon and rectum were all positive for amyloidosis as evidenced by apple-green birefringence on Congo red stain when viewed under polarized light. Immunohistochemistry for AA amyloid was negative. The final diagnosis was AL amyloidosis of the gastrointestinal tract and monoclonal gammopathy of undetermined significance (MGUS). Patient was commenced of bortezomib, cyclophosphamide and dexamethasone.

DISCUSSION: The endoscopic finding in gastrointestinal amyloidosis can be non-specific and variable. There is no effective endoscopic therapy for bleeding gastric amyloidosis and histopathological evaluation if necessary to confirm the diagnosis.

CONCLUSION: The diagnosis of gastric amyloidosis requires a high index of suspicion and prompt evaluation is key to determining the best treatment modality for the patient.

EFFECTS OF LACTOBACILLUS-CONTAINING MILK DRINK IN CHRONIC UNPREDICTABLE STRESS ANIMAL MODEL

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OBJECTIVE: Our recent work have linked gut microbiota with changes in emotional states through the gut-brain axis. In line with this, we aimed to investigate the potential anti-depressive effects of probiotics in *in vivo* model of chronic unpredictable stress (CUS).

METHODOLOGY: Adult male Sprague Dawley rats were randomly grouped into six (n=4 per group) and given the following treatments for four weeks: control group (consumed ultrapure water), control+probiotics (1.0 x 10⁹ of *Lactobacillus paracesei* and *Lactobacillus acidophilus*), CUS with consumption of ultrapure water, CUS+probiotics, CUS+escitoloqram (10 mg/kg), and CUS+probiotics+escitoloqram. The animals' anhedonia tendency was deliberated by sucrose preference test (SPT) were recorded at week 0 and week 7 after CUS procedures including body weight. Depression was assessed through forced swimming test (FST) after treatment. Immunohistochemistry was performed to determine presence of serotonin receptors, 5-HT1A and 5-HT1B in brain and colon.

RESULTS: By the end of the experiment, the CUS group recorded significantly higher level of anhedonia and depression-like behavior, and treatment with priobiotics, Escitoloqram, and probiotics+Escitoloqram significantly alleviated CUS-induced animal models. Rats treated with probiotic recorded highest body weight post-treatment. Body weight of the CUS rats treated with probiotic and Escitoloqram on week 7 were significantly lower than CUS rats treated with probiotic only (P<0.05). Immunohistochemistry of 5-HTA showed a significant increase 5HT1A cytoplasm staining in rats treated with probiotic as compared to control (P<0.05). Nuclear staining of 5HT1A increased in sole consumption of probiotics or escitoloqram. Negative results for nucleus or cytoplasm staining by 5HT1B receptors.

DISCUSSION & CONCLUSION: Daily consumption of *Lactobacillus* containing cultured milk drink showed positive response in reducing anhedonia-like behaviour and despair in animals. These effects could probably regulate via serotonin action. This strengthens evidence for lowering depression among IBS-constipated patients.

OUTCOMES OF COMPUTED TOMOGRAPHY ANGIOGRAPHY (CTA) IN PATIENTS WITH GASTROINTESTINAL BLEEDING: A RETROSPECTIVE AUDIT IN A TERTIARY CARE HOSPITAL

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BACKGROUND/AIM: Computed tomography angiography (CTA) is frequently being utilized in managing gastrointestinal (GI) bleeding. We aim to retrospectively analyze the outcomes of CTA in our cohort.

METHODS: All GI bleeding patients admitted to Hospital Canselor Tuanku Muhriz, UKM from January 2020 until May 2022, were included in this study.

RESULTS: Seventy-seven patients who were presented with GI bleeding underwent CTA. Median age was 66 years, with slight male predominance (66.2%). Proportion of patients with major comorbidities was as follow: cardiovascular disease (n=53,69%), malignancy (n=12,16%), and end-stage renal disease (n=10,13%). Twenty-two were on antiplatelet agents while 4 patients were on anticoagulants.

Out of 36 CTAs that were performed for upper GI bleeding (UGIB), 12 (33.3%) were positive for active bleeding. Subsequently, embolization was performed in 10 patients (one patient proceeded to surgical laparotomy for rebleeding), with endoscopic hemostasis was performed in 2 patients. Regarding CTA for lower GI bleeding (LGIB), 11/35 (31.4%) CTAs were positive for active bleeding and all proceeded to embolization with successful hemostasis.

Of the 6 patients who experienced rebleeding after an initial negative CTA and underwent surgical laparotomy, only 1 survived (young, no comorbidities). In 5 UGIB patients with failed endoscopic hemostasis and negative CTA, all were sent for prophylactic embolization (and achieved initial hemostasis). In others, 2 underwent laparotomy, 2 underwent repeat CTA (and became positive) and proceeded to embolization, and 1 was treated conservatively.

The median waiting time for CTA to be performed was 104 minutes. The most common culprit bleeding vessels for the upper GI was gastroduodenal (4) and left gastric arteries (4), whereas superior rectal artery (3) for the lower GI.

CONCLUSIONS: Detection rates for active GI bleeding in our cohort were modest. Nevertheless, high success rate of hemostasis post embolization was obtained. In cases with failed endoscopic hemostasis but negative CTA, prophylactic embolization might have a role. In addition, repeated CTAs might be needed to detect the ongoing bleeding.

A SINGLE-CENTRE TERTIARY HOSPITAL'S UTILIZATION OF TRANSIENT ELASTOGRAPHY (TE): A 9-YEAR EXPERIENCE

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INTRODUCTION: Liver biopsy has long been the gold standard to evaluate liver fibrosis. TE was developed as a non-invasive method to assess liver fibrosis by measuring liver stiffness using shear wave velocity. Many studies have proven its effectiveness as a method for evaluating liver fibrosis.¹⁻²

OBJECTIVE: To determine the prevalence and aetiology of liver fibrosis and cirrhosis in our local population

METHOD: Consecutive patients who had TE done at UMMC from 1 January 2013 to 31 December 2021 were included in this study.

RESULTS: A total of 3066 patients were included, in which 51.7% were males and 48.3% were females. The median CAP value was 271 dB/m. 61.2% of patients had steatosis, which was predominantly S3 steatosis (45.5%). The median E value was 6.5kPa. Only 11.2% and 11.3% of patients had fibrosis and cirrhosis respectively. The most common aetiology for fibrosis was reported to be NASH (32.8%), followed by chronic hepatitis B (25.2%) and chronic hepatitis C (6.7%). This finding was also found to be similar in cirrhosis (NASH 32.5%, CHB 17.2% and CHC 11.9%).

DISCUSSION: It is noteworthy to highlight that a large proportion of our patients has severe steatosis. This is likely in keeping with the global rise of obesity.³ Our study also shows that the most common aetiology for fibrosis and cirrhosis is NASH, in comparison with a previous earlier study at our centre, that reported the most common aetiology being CHB.⁴ This may be attributed to the availability of the national Hepatitis B vaccination program for newborns and the improvement in blood transfusion safety.

CONCLUSION: NASH is now the emerging leading cause of liver fibrosis and cirrhosis. Further studies can be done to use TE as a means of risk stratification for these patients to prioritise for clinical trials, new pharmacotherapies and closer surveillance.

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EVALUATING CLINICAL OUTCOMES IN COVID-19 PATIENTS WITH ABNORMAL LIVER TESTS AT FIRST PRESENTATION

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INTRODUCTION: Abnormal liver enzymes (LFTs) are frequently reported in patients with COVID-19. Patients with severe COVID-19 exhibited increased ALT and AST values. The prognostic value of abnormal LFTs remains unclear and is yet to be evaluated in our population.

OBJECTIVE: Our study aims to analyse the association between abnormal LFTs at initial presentation and severity of COVID-19 in terms of in-hospital mortality, ICU admission and mechanical ventilation rates

METHODOLOGY: All patients admitted with COVID-19 in July 2021 to our academic centre were retrospectively reviewed. On admission, patients with abnormal LFTs (ALT > 40 U/L, AST > 40 U/L, ALP 128 U/L, or bilirubin > 20 umol/L) were compared to those with normal LFTs. Chi-square, independent t-test, and multivariate logistic regression analysis performed.

RESULTS: A total of 295 patients were included for analysis. 200 patients (67.8%) with a median age of 49.5 (IQR 37–61) had abnormal LFTs. In-hospital mortality rate was higher in patients who had abnormal LFTs on presentation (8% vs 5% $p = 0.276$), OR 1.565 (95% CI 0.556-4.408). Abnormal LFTs increased the likelihood of ICU admission by 2.22 (95% CI 0.988-5.02, $p = 0.033$) and mechanical ventilation by 2.45 (95% CI 0.90-6.64, $p = 0.049$). Abnormal LFTs had a 1.56-fold greater mortality risk than normal LFTs.

DISCUSSION: In hospitalised patients with COVID-19 infection, the presence of abnormal LFTs on admission is associated with ICU admission, mechanical ventilation, and may be used as a good predictor of severity.

CONCLUSION: More than half of the patients admitted with COVID-19 have abnormal LFTs. Further studies to determine its clinical significance are required.

	Abnormal Liver Enzymes N=200	Normal Liver Enzymes N=95	p value	Odd Ratio (95% CI)
Age, median (range)	47.5 (37-61)	54 (24-74)	0.033	
Sex, n (%)			0.01 (b)	2.19 (1.33-3.60)
- males	125 (62.5)	41(43)		
- females	75 (37.5)	54 (57)		
Ethnicity, n (%)			0.445 (a)	
- Malays	147 (73.5)	62 (65)		
- Chinese	28 (14)	16 (17)		
- Indians	17 (8.5)	13 (14)		
- Others	8 (4)	4 (4)		
Comorbidities, n (%)				
- DM	55 (27.5)	41 (43)	0.006 (b)	2.002 (1.201 - 3.337)
- HTN	68 (34)	43 (45)	0.042 (b)	1.605 (0.975 - 2.643)
- IHD	8 (4)	4 (4)	0.577 (b)	1.055 (0.310 - 3.594)
- CKD	4 (2)	5 (5)	0.125 (b)	2.722 (0.714 - 10.378)
- CLD	13 (6.5)	3 (3)	0.183 (b)	0.469 (0.130 - 1.687)
- Current malignancy	1 (0.5)	1 (1)	0.541(b)	2.117 (0.131 - 34.215)
BMI, median (range)	29.2 (18.9-45)	29.4 (19.6-49)	0.547	
DOI on admission, median (range)	9 (1-21)	8 (1-20)	0.449	
COVID category, n (%)				
- 2	0 (0)	3 (3)	0.004 (a)	
- 3	4 (2)	3 (3)		
- 4	172 (86)	84 (88)		
- 5	24 (12)	5 (5)		
LFTs, median (range)				
- ALT (U/L)	57 (9-726)	23 (11-39)		
- ALP (U/L)	70 (12-387)	63 (34-126)		
- AST (U/L)	58 (20-411)	28 (6-39)		
- Total Bili (umol/L)	9 (2-119)	8 (4-19)		
ICU admission, n (%)	34 (17)	8 (8)	0.033 (b)	2.22 (0.988-5.02)
Mechanical ventilation, n (%)	24 (12)	5 (5)	0.049 (b)	2.45 (0.90-6.64)
Inpatient mortality, n (%)	16 (8)	5 (5)	0.276 (b)	1.565(0.556-4.408)
LOS, median (range)	7 (1-101)	6 (1-56)	0.271	

THE CLINICAL FEATURES, OUTCOME AND INCIDENCE OF SPONTANEOUS BACTERIAL PERITONITIS (SBP) IN PATIENTS ADMITTED WITH ASCITES TO A TERTIARY LIVER CENTRE

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BACKGROUND: Ascitic fluid cell count at a cut off > 250 polymorphonuclear (PMN) per mm³ is a sensitive and specific test for detection of SBP whereas ascitic culture is essential to guide antibiotic therapy.

OBJECTIVE: To study the clinical characteristics, outcome and incidence of SBP in patients presented with ascites.

METHODOLOGY: Retrospective analysis of prospectively collected data from our peritoneal tapping records between March to June 2022. Ascitic fluid cell count by automated assay and cultures by direct inoculation into culture medium at bedside were performed on all patients during each tapping session. Patients who had >250 PMN/mm³ and/or a positive culture were diagnosed to have SBP and they were treated with antibiotics and albumin prophylaxis.

RESULTS: Total of 96 patients were recruited. The median age was 61 years old (IQR 17.25) with a female to male ratio of 1:2.4. The racial distributions were Malays 46.9%, Chinese 30.2%, Indians 20.8% and others 2.1%. The aetiologies of the underlying chronic liver disease were chronic hepatitis C (29.2%), chronic hepatitis B (20.8%), alcohol related liver cirrhosis (19.8%), metabolic associated fatty liver disease (15.6%), autoimmune hepatitis (3.1%), and 11.56% from other causes. Hepatocellular carcinoma was diagnosed in 11.5%. The median MELD Na score was 20 (IQR 7.25). 68.8% was tapped for symptomatic ascites whereas the remaining for presumed SBP. Ten (10.4%) patients were proven SBP. Six had bacterascites SBP, three were culture negative SBP but >250 PMN/mm³ and one had both. 33.3% of bacterascites SBP had SIRS criteria on presentation. The micro-organism identified from positive cultures were *Actinomyces odontolyticus*, *staphylococcus epidermidis*, *MRO baumannii* or *MRO E.coli* where only 14.3% were sensitive to third generation cephalosporins. The mortality rate was 3.1%.

CONCLUSION: From our study, chronic hepatitis C was the main aetiology of patients presented with ascites. They had high MELD-Na score with 3.1% mortality rate. The incidence of SBP was 10.4% with high rates of resistance to the widely used first line antibiotics.

HEPATIC NEUROENDOCRINE TUMOUR WITH PARANEOPLASTIC NEUROPATHY, MIMICKING GULLAIN-BARRE SYNDROME

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INTRODUCTION / OBJECTIVE: Neuroendocrine tumours (NET) can be found in liver, as primary carcinoid or distant metastasis.^{1,2} Primary hepatic NET is extremely rare, with only 151 liver NET reported worldwide.² Patients with NET can present with neuropathy as paraneoplastic manifestation.³ This report illustrates a case of a pregnant lady presenting with signs and symptoms suggestive of Guillain-Barre Syndrome (GBS), eventually was diagnosed to have hepatic NET.

CASE REPORT: A 34 weeks pregnant lady presented with bilateral lower limbs weakness and numbness. Apart from Gestational Diabetes, she had no other medical issue. Lower limbs' power was 2/5, sensation reduced up to Lumbar 4, and hyporeflexia was present. Nerve Conduction Study showed Acute Motor Axonal Neuropathy. Despite completing Intravenous Immunoglobulin, her weakness worsened, making her had no sensation of bearing down during baby delivery, which was successfully completed with instrumental assistance. She was intubated eventually with failed extubation later, subsequently succumbed to death due to severe sepsis. Earlier on, as liver was palpable on examination (no transaminitis/hyperbilirubinaemia), CT abdomen was performed, showing a 30cm liver and liver lesions likely representing multicentric hepatoma. Histology from liver biopsy showed grade 3 NET.

DISCUSSION: Despite NET being a carcinoid tumour, patients may not present with classical carcinoid symptoms.^{3,4} Liver Function Tests can be normal in liver NET.⁵ Suspicion of other underlying aetiology mimicking GBS should be sought when seeing the Immunoglobulins do not improve patients' symptoms. Paraneoplastic antibodies may not be positive,⁶ like our patient's. Even her AFP was high, with CT showing hepatoma, other sorts of malignancy need to be considered aside Hepatocellular Carcinoma, due to the atypical presentation of GBS.

CONCLUSION: Liver NET is extremely rare, more so for a pregnant lady who presented with mimicker of GBS. Recognising the diagnosis earlier is essential, so as to provide appropriate therapy, with resection plus cytoreduction showing promising treatment, although robust evidence is still lacking due to the rarity of the disease.^{2,3}

RELEVANT TABLES/ FIGURES:

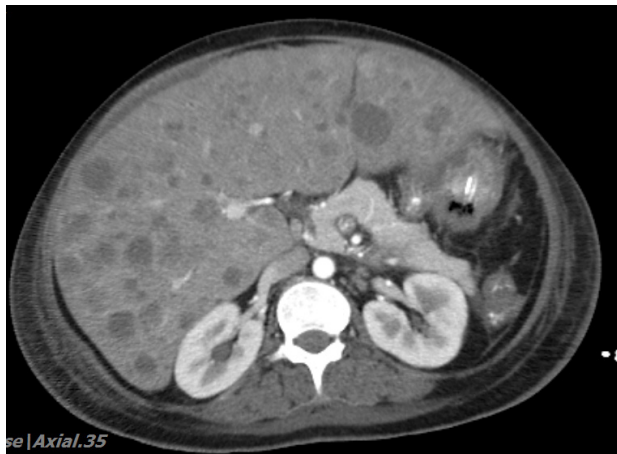


Figure 1 : CECT Abdomen (Arterial Phase)



Figure 2 : CECT Abdomen (Venous phase)

Table 1 : Relevant Blood Investigations

Tests	Normal Range	5/2	12/2	14/2	21/2	27/2	3/3	6/3
Haemoglobin	13-17 (g/dL)	12	9.9	9.3	7.1	7.8	8.5	5.8
White Cells	4-10 (10 ³ /uL)	13	15.6	20.4	19.5	5.1	11.1	10.2
Platelets	150-410 (10 ³ /uL)	192	289	215	207	67	25	4
Urea	1.7-8.3 (mmol/L)	8.1	13.5	19.3	21.8	7.7	16.8	22.1
Creatinine	61-110 (umol/L)	116	123	146	126	102	264	371
Alanine Transamines	0-55 (U/L)			26				18
Aspartate Transamines	5-34 (U/L)			111				261
Albumin	35-50 (g/L)	29		16				22
Alkaline Phosphatase	40-150 (U/L)			431		1010	1545	1221
Total bilirubin	3.4-20.5 (umol/L)			22		15.7		
Ammonia	11 to 32 (µmol/L)					130	82	135
Alpha Feto-Protein	10-20 (ng/mL)			94.2				
Cancer Antigen-125	0-35 (units/mL)			187				
Paraneoplastic markers (anti Hu, Yo, Ri, Ma, Amphiphysin and CV2)						negative		
Erythrocyte Sedimentation Rate	1-20 (mm/hour)			100				
Histopathological examination (Colonoscopy)					normal			

FACTORS ASSOCIATING BOWEL PREPARATION IN A SINGLE CENTRE

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OBJECTIVE: Bowel preparations are routinely given pre-colonoscopy. Our aim is to investigate any association between bowel preparation with either age, gender, type of bowel preparation, or urgency of the procedure.

METHODOLOGY: We studied retrospectively all colonoscopies done at Hospital Kuala Lumpur (HKL) for a span of 11 years from 1.1.2011 to 31.12.2021. Demographic and endoscopy data were collected via Malaysia Gastrointestinal Registry (MGIR).

RESULTS: From a total of 25,877 colonoscopies, 55.6% were males, 44 % were females, and mean age was 58.9 years old (p-value 0.09, SD 14.92) with a range age of 10.33 - 97.92 years old. Half (50.1%) of the colonoscopies done were of 60 to 80 years age bracket, followed by 40 to 60 years age bracket (32.6%) .

Overall bowel preparation was good (40%), followed by fair (26.9%) and excellent (13.9%). 81% of colonoscopies were elective, and 17.5% were done as urgent, and from all electives 42.9% had good bowel preparation, compared to only 29% of urgent cases.

Excellent and good bowel preparation quality was achievable with PEG (57%) and Sodium phosphate (54%) as compared to other types (28.51%). 74.1% chose PEG as bowel preparation, followed by sodium phosphate (18.9%) and others (1.6%). 3.6% had no bowel preparation leading to poor bowel preparation in 62% of patients.

Majority (77.4%) of all colonoscopies extended up to caecum and terminal ileum while others were to the rest of the colon. For the first group, most had good (44.9%) bowel preparation, while the latter, most (48.8%) had poor bowel preparation. There was no significant difference in bowel preparation between age groups or genders.

DISCUSSION: Factors influencing bowel preparation need to be considered prior to planning for a colonoscopy.

CONCLUSION: Good bowel preparation is associated with urgency of colonoscopy, type of bowel preparation, and is reflected on the extent of colonoscopy.

FREQUENCY OF SIGNIFICANT FIBROSIS IN VARIOUS CHRONIC LIVER DISEASES: AN EVALUATION WITH TRANSIENT ELASTOGRAPHY (TE)

Shahreedhan Shahrani¹, Preetica Mayuri Balakrishnan², Koshni Ravi², Sandeep Singh Gill R S², Chee Sher Wye², Saiful Hasyim Zulkeflie², Ng Ying Zhuang³, Lee Wai Kin⁴, Mohamed Amin A K⁵, Sooi Choong Yeong⁶, C Vikneshwaran C K¹, Nik Arsyad N M A⁷, Ruben Skantha¹, Mohd Fairul Limun¹, Abdul Malik Mohamed Talha⁸, Chuah Kee Huat², Khoo Stanley¹, Ruveena Bhavani¹, Chan Wah Kheong², Sanjiv Mahadeva²

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INTRODUCTION: Liver biopsy has long been the gold standard to evaluate liver fibrosis. TE was developed as a non-invasive method to assess liver fibrosis by measuring liver stiffness using shear wave velocity. Many studies have proven its effectiveness as a method for evaluating liver fibrosis.¹⁻² The use of TE in UMMC began in 2013.

OBJECTIVE: To determine the frequency and aetiology of liver fibrosis and cirrhosis in our local population

METHOD: This was a retrospective study conducted at UMMC. Inclusion criteria was all patients who had TE performed from 1 January 2013 to 31 December 2021. Their demographics, clinical characteristics and TE findings were charted.

RESULTS: A total of 3066 patients were included, in which 51.7% were males and 48.3% were females. The median CAP value was 271 dB/m. The median E value was 6.5kPa. 11.2% and 11.3% of patients had significant fibrosis (10.1-14.9kPa) and cirrhosis (≥ 15 kPa) respectively. Non-alcoholic fatty liver disease (NAFLD) was noted to be the most common aetiology for fibrosis (32.8%), followed by chronic hepatitis B (CHB) at 25.2%, chronic hepatitis C (CHC) at 6.7% and alcoholic liver disease (ALD) with 1.3%. This finding was also found to be similar in the cirrhosis group (NAFLD 32.5%, CHB 17.2%, CHC 11.9% and ALD 1.4%).

DISCUSSION: Our study shows that the most common cause for significant fibrosis and cirrhosis is NAFLD. This is in contrast with previous studies, that reported the most common aetiology being CHB.3-4 This is likely due to the availability of effective treatment for hepatitis B and C. This may also be attributed to the initiation of the national Hepatitis B vaccination program for newborns and the improvement in blood transfusion safety.

CONCLUSION: NAFLD has the greatest frequency of fibrosis compared with other aetiologies of liver disease - mainly as there is no effective treatment, unlike viral hepatitis.

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FREQUENCY OF SIGNIFICANT STEATOSIS IN VARIOUS CHRONIC LIVER DISEASES: AN EVALUATION WITH TRANSIENT ELASTOGRAPHY

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⁹KPJ Seremban Specialist Hospital, Negeri Sembilan, Malaysia

INTRODUCTION: TE was developed as a non-invasive method to assess liver fibrosis and steatosis using shear wave velocity. Many studies have proven its' effectiveness as a method for evaluating liver fibrosis and steatosis.¹⁻²

OBJECTIVE: To determine the prevalence and aetiology of steatosis in our local population.

METHOD: This study was conducted as a retrospective review on all patients who had TE performed at UMMC from 1 January 2013 to 31 December 2021. Their demographics, clinical characteristics and TE findings were charted.

RESULTS: A total of 3066 patients were included. 51.7% were males and 48.3% were females. The median CAP value was 271 dB/m. The median E value was 6.5kPa. 61.2% of patients had steatosis, with a staggering number of of these patients having significant steatosis (51.8%). 6.3% of patients had S2 steatosis whereas 45.5% of patients had severe (S3) steatosis. Interestingly, in those with S2 steatosis, 34.7% had chronic hepatitis B (CHB), 31.5% had non-alcoholic fatty liver disease (NAFLD), 5.2% with chronic hepatitis C (CHC) and 1% had alcoholic liver disease (ALD). In the S3 steatosis group, 66.7% had NAFLD, followed by ALD (36.6%), CHB (30.1%) and CHC (27.7%).

DISCUSSION: It is important to highlight that a large proportion of our patients has significant steatosis. This is likely in keeping with the global rise of obesity and sedentary lifestyle.³ NAFLD is a 4-decades old nomenclature that does not appropriately address the heterogenous pathogenicity of fatty liver disease. Our study reflects this heterogeneity, as it shows that steatosis often co-exists with other diverse aetiologies.

CONCLUSION: Whilst NAFLD clearly has the greatest frequency of severe steatosis, it is also present in other aetiologies. These findings support the new terminology of metabolic associated fatty liver disease (MAFLD), which reflects the fact that NAFLD commonly co-exists with other aetiologies.

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FLOOR PLAN

CONFERENCE HALL 2

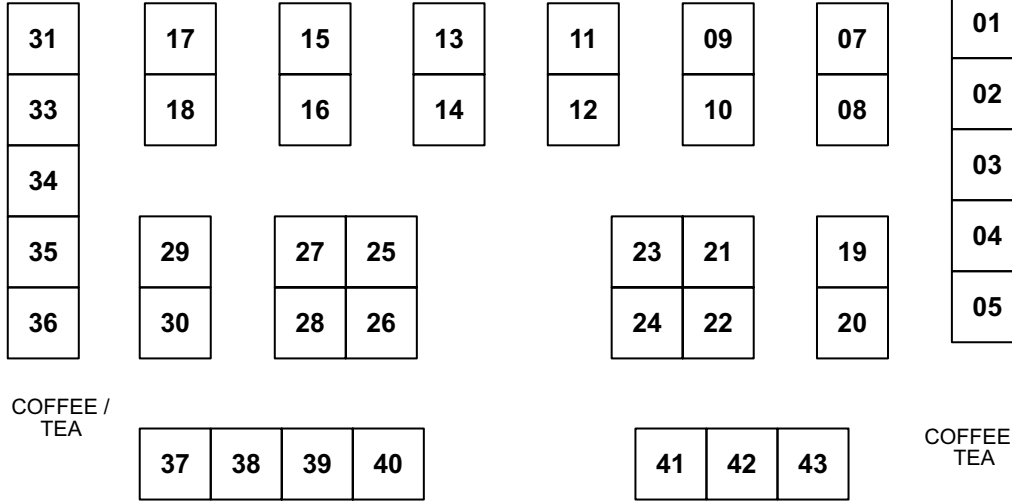
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ENTRANCE / EXIT

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Exhibition Hall



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conference 2

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04	Hovid Berhad
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37	Kotra Pharma
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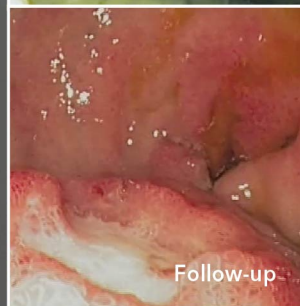
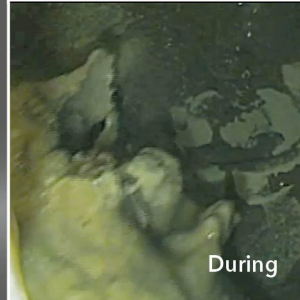
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