



**SASLT** **11<sup>TH</sup> ISSUE** **DECEMBER 2024**  
**NEWSLETTER**

# Table Of Content

**01** Page 1  
**WELCOME**

**02** Page 2  
**Dr. Adel Nazmi AlQutub**

Highlights from the Saudi Liver Meeting:  
A Comprehensive Three-Day Event  
in Hepatology

**03** Page 4  
**Dr. Zobair M. Younossi**  
Metabolic Dysfunction Associated  
Steatotic Liver Disease (MASLD)  
in 2024

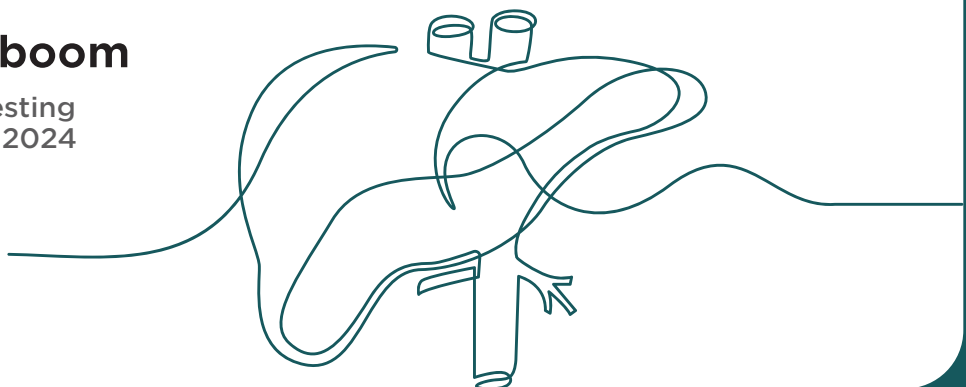
**04** Page 9  
**Dr. Maria Buti Ferret**  
Breaking Barriers in Hepatitis D and  
C: Highlights from the Saudi Liver  
Meeting 2024

**05** Page 12  
**Dr. A.G. Onno Holleboom**  
Non-Invasive Liver Fibrosis Testing  
for MASLD: Insights from SLM 2024

**06** Page 16  
**Dr. Muhannad AlRuwaithi**  
Pediatric Hepatology Course Highlights

**07** Page 18  
**Dr. Bader AlDahash**  
Reflections on the Saudi Liver  
Meeting 2024:  
Insights from the Global NASH Council

**08** Page 20  
**Dr. Mohammed Yousef  
Alghamdi**  
Spotlight on the Abstract Contest at  
Saudi Liver Meeting 2024:  
Recognizing Innovation in Liver  
Disease Research



# WELCOME

## To The SASLT Newsletter

In this edition, we're excited to share highlights from the Saudi Liver Meeting (SLM) 2024, held from October 10-13 at Princess Noura University in Riyadh, KSA. This year's event brought together leading experts, healthcare professionals, and researchers to discuss the latest advancements in liver disease management, diagnosis, and treatment. A key highlight was our collaboration with the Global NASH Council, which enriched the discussions on non-alcoholic steatohepatitis (NASH).

We are pleased to present key moments, insightful discussions, and groundbreaking research from the meeting, including contributions from international speakers on a wide range of topics.

Join us as we reflect on the success of SLM 2024 and look ahead to the future of liver disease in Saudi Arabia and beyond..

**Dr. Faisal Abaalkhadl**  
**Dr. Mohammed Shagrani**

# Highlights from the Saudi Liver Meeting: A Comprehensive Three-Day Event in Hepatology



## By Dr Adel Alqutub

Consultant Gastroenterologist and Transplant Hepatologist  
Director of Patient Safety & Risk Management Administration  
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for Health Sciences and Princess Noura University

The recent Saudi Liver Meeting, held over an intensive three-day program, brought together experts from around the world to discuss the latest advancements in hepatology. This year's conference was marked by its rich, compact, and comprehensive schedule that merged insights across pediatric hepatology, transplant coordination, and adult hepatology. The program featured a diverse array of sessions tailored to meet the educational needs of specialists and trainees alike. Pediatric hepatology sessions covered essential updates in managing liver conditions in younger populations, while the adult hepatology postgraduate as well pediatric hepatology courses focused on the latest in diagnosis, treatment, and research. The transplant coordinator course was particularly beneficial, providing guidance on best practices in transplant care coordination.

### Global NASH Program

One of the standout sessions was the Global NASH (Non-Alcoholic Steatohepatitis) talk, a crucial discussion given the rising prevalence of NASH worldwide. This session provided attendees with an in-depth look at current trends in NASH management, including emerging therapies and strategies to prevent disease progression. The insights shared were highly relevant for clinicians facing increasing cases of NASH in both Saudi Arabia and globally.

### Recognition Through the SASLT Annual Award

A significant highlight of the event was the presentation of the SASLT Award, the Saudi Society for the Study of Liver Diseases and Transplantation's Annual Award. This year, the prestigious award was given to a leading senior consultant in the field of hepatology, recognizing their outstanding contributions and lifelong dedication to liver disease treatment and research in Saudi Arabia.

## Engaging National and International Speakers

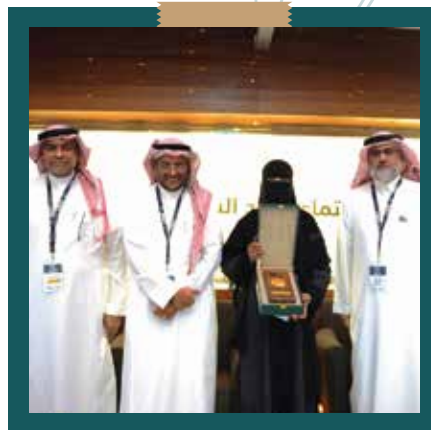
The Saudi Liver Meeting drew an exemplary turnout, with both national and international experts sharing their knowledge. Speakers presented various aspects of hepatology and liver transplantation for both adult and pediatric populations, fostering a well-rounded dialogue that included perspectives from different parts of the world. Attendees benefited greatly from this diversity, gaining insights into global best practices and innovative research.

## Poster Sessions and Research Recognition

Poster sessions were a dynamic part of the conference, showcasing research from emerging and established hepatologists. Participants presented studies on liver disease treatment, transplant outcomes, and more, contributing to an atmosphere of collaboration and academic exchange. Posters were rigorously evaluated, and winners were recognized for their exceptional contributions to hepatology research.

## Conclusion

The Saudi Liver Meeting once again succeeded in providing a robust platform for education, collaboration, and recognition within the hepatology field. By bringing together experts in pediatric, adult hepatology and transplantation and recognizing achievements in the field, the meeting underscored Saudi Arabia's commitment to advancing liver disease treatment and research. With an exceptional lineup of speakers, awards, and collaborative sessions, this year's meeting set a high standard for future events in hepatology, leaving attendees inspired and well-prepared to apply new knowledge to their clinical practice.



## Metabolic Dysfunction Associated Steatotic Liver Disease (MASLD) in 2024



### Zobair M. Younossi, MD, MPH

Chairman, The Global NASH Council,  
Center for Outcomes Research in Liver Diseases  
Professor and Chairman, Beatty Liver and Obesity  
Research Program, Inova Health System

Metabolic Dysfunction Associated Steatotic Liver Disease (MASLD), previously known as non-alcoholic fatty liver disease (NAFLD), is part of the spectrum of metabolic diseases that includes cardio-renal manifestations and hepatic manifestation. The global prevalence of MASLD is estimated to be around 38% among adults. This prevalence rate seems to be highest in Latin America and Middle East and North Africa (MENA) regions with countries such as Egypt, Türkiye and Iran reporting some of the highest prevalence rates for MASLD. In addition to the high prevalence rates among adults, MASLD is also common among children and the younger population with an estimated prevalence rate of 15-20%.

MASLD and metabolic dysfunction associated steatohepatitis (MASH) have been considered as the hepatic manifestation of metabolic syndrome due to its close associations with cardio-metabolic risks (CMRs). In this context, the more components of metabolic features are present, the higher the risk for MASLD/MASH, advanced fibrosis and mortality. In fact, patients with type 2 diabetes (T2D) have an 11-fold increased risk for MASLD. Furthermore, co-existence of MASLD and T2D is associated with the highest risk for all-cause and cause-specific mortality. Given these close associations, the current global epidemic of obesity and T2D is driving the global burden of MASLD. In addition to CMRs, there are other modifiable risks for MASLD that are related to food insecurity and social determinants of health. Other risk factors that are considered non-modifiable, including age, sex, ethnicity as well as genetic markers such as PNPLA3 genotype, can impact the prevalence and severity of MASLD.



In addition to increasing CMRs increasing the risk for adverse outcomes in MASLD, stage of hepatic fibrosis is an independent predictor of mortality. Nevertheless, liver biopsy for staging MASLD is not desirable or feasible in the current clinical practice setting. This has led to the development and validation of non-invasive tests (NITs) designed to predict long-term outcomes. These NITs have been used to create risk stratification algorithms for identification of MASLD patients at highest risk for adverse outcomes.

All these data suggest that the epidemiologic burden of MASLD is enormous and growing. In this context, MASLD has become the dominant liver disease in most regions of the world and is rapidly replacing viral hepatitis as the most common cause of cirrhosis, hepatocellular carcinoma (HCC), liver mortality and indication for liver transplantation.

Given the association of MASLD with obesity and other CMRs, interventions are focused on managing lifestyle. These interventions include weight loss through a healthy diet, decreased consumption of ultra-processed food and high fructose containing foods such as sugar-sweetened beverages. Furthermore, increasing physical activity both in the form of cardiovascular and resistance exercises are important components of lifestyle intervention. It is important to note that lifestyle intervention should always be recommended as the first line treatment of MASLD regardless of medical regimens used to target CMRs (obesity, T2D and dyslipidemia) or MASH. Nevertheless, managing CMRs, especially T2D and obesity with medication must also be optimized. Finally, in 2024, resmetirom was approved in the United States (US) as a treatment option for non-cirrhotic MASH patients with stages F2 and F3 as determined by NITs. Additionally, a large number of other therapeutic options are being tested in clinical trials. Among these, results from phase 3 clinical trial of semaglutide (GLP-1 receptor agonist) in MASH provided evidence for histologic improvement of hepatic fibrosis and steatohepatitis. This drug is expected to undergo approval in the United States in 2025.



To address this global burden of MASLD and clinically relevant issues, the Global NASH/MASH Council (GNC) has been established with 270 members from 60 countries from all regions of the world. GNC and its global registries have led to some of the most important studies in the field of MASLD. In addition to research and global collaboration, GNC is also engaged in educational programs. In 2024, Saudi Liver Diseases and Transplantation Society (SASLT) and GNC collaborated to deliver a cutting-edge session on MASLD during the Saudi Liver Meeting and SASLT 2024 Conference in Riyadh, Saudi Arabia. This highly successful meeting, which was delivered by regional and international experts, discussed disease burden, new NITs and therapeutic approaches for patients with MASLD/MASH. In this context, SASLT and the experts from Saudi Arabia has taken a very active leading role to better understand this disease and its impact in the region as well as to develop potential strategies to address future burden of this important liver disease.



Dr. Faisal Abaalkhail, President of SASLT and Dr. Zobair Younossi, Chairman of GNC opening the MASH Session during the 2024 SASLT and SLD meeting in Riyadh Saudi Arabia



Member of GNC participating as faculty for 2024 SASLT and SLD meeting in Riyadh Saudi Arabia. From Left to right Drs. Onno Holleboom, Rafael Esteban, Maria Buti, Zobair Younossi, Khalid Alswat and Hirokazu

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## Breaking Barriers in Hepatitis D and C: Highlights from the Saudi Liver Meeting 2024




### Professor Maria Buti

Senior Consultant and Professor of Medicine  
Hospital General Universitari Valle Hebron in Barcelona.

I was honored to contribute as invited speaker to the 2024 Saudi Society for the Study of Liver Diseases conference last October. It was a privilege to engage with esteemed professionals and contribute to advancing the understanding and management of liver diseases. The 2024 edition of the congress was hosted at the Princess Nourah bint Abdulrahman University, the world's largest women's university, reflecting the nation's commitment to inclusivity and excellence in academic and scientific pursuits.

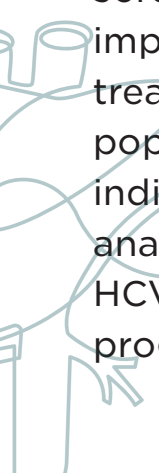
My contribution was in the topic of viral hepatitis, particularly Hepatitis D and C. Hepatitis D (HDV) caused by the Hepatitis Delta Virus, is most severe liver disease among viral hepatitis infections, including rapid progression to cirrhosis, liver failure, and hepatocellular carcinoma. HDV infection depends on Hepatitis B Virus (HBV) for the persistence of infection and replication

An estimated 10-20 million people worldwide are infected by HDV, with high prevalence in regions such as Central Asia, Eastern Europe, the Middle East, and parts of Africa. In Saudi Arabia, HDV infects 7% of HBsAg carriers. However, the rate of testing for HDV is suboptimal related to the challenges in HDV screening and diagnosis. There are several challenges such as many HDV cases remain undiagnosed due to mild or absent symptoms in early stages, the limited awareness of the infection among healthcare providers who may not routinely test for HDV in HBV-positive patients, leading to underdiagnosis and the complex testing and diagnosis that requires first the determination of anti-HDV Antibodies and later if they are detected the confirmation of active infection by measuring HDV RNA. But these tests are not widely available and HDV RNA are not standardized.



The introduction of Bulevirtide (BLV), the first drug specifically approved for the treatment of hepatitis D virus represents a significant breakthrough in addressing Chronic Hepatitis D. BLV has been approved for adults patients with compensated chronic hepatitis D including liver cirrhosis. BLV is a viral entry inhibitor that binds to NTCP (sodium taurocholate co-transporting polypeptide), a receptor on hepatocytes essential for HDV and HBV entry into liver cells. By blocking this receptor, bulevirtide prevents new infections of liver cells, reducing HDV replication and viral spread. The drug is administered as a subcutaneous injection at a dose of 2 mg once daily. In the clinical trials and real-world studies, BLV demonstrates significant reduction in HDV RNA levels, even undetectable HDV RNA, improved liver function test (normalization of ALT levels) reflecting reduced liver inflammation and fibrosis stabilization or improvement in some patients. Studies are ongoing to determine the drug's long-term safety and its role in achieving a functional cure.

In the field of Hepatitis C, modern DAAs like sofosbuvir/velpatasvir and glecaprevir/pibrentasvir, effectively treat all HCV genotypes with cure rates exceeding 95% with short treatment duration (8-12 weeks) and an excellent safety profile. New data show their efficacy and safety in pregnancy and in decompensated patients. However, access to these drugs is still an issue particularly for the most vulnerable populations. Innovations in Hepatitis C are in the field of finding patients by community strategies using point of care diagnosis, universal screening programs introducing policies advocating for routine HCV screening in adults and high-risk populations (e.g., people who inject drugs, incarcerated individuals) which will help identify cases earlier. Another important aspect is to integrated HCV screening programs with HIV and HBV testing, and other conditions improves efficiency and uptake. A further step is to bringing testing and treatment directly to the community particularly to underserved populations through mobile clinics and self-sampling kits which will allow individuals to collect blood or saliva samples and send them for laboratory analysis, increasing convenience and confidentiality. These innovations in HCV diagnosis, therapy and patient-finding strategies are propelling progress toward global elimination



I am deeply grateful for this opportunity to exchange ideas, share insights, and collaborate on such an important meeting, Thank you once again for your kind invitation and your exceptional hospitality during the medical meeting



# Non-Invasive Liver Fibrosis Testing for MASLD: Insights from SLM 2024



## Dr. A.G. (Onno) Holleboom MD PhD

Internist-endocrinologist & Vascular medicine specialist  
Associate professor  
Dept. of Vascular Medicine, Internal Medicine in collab.  
with Hepatology Amsterdam UMC

During the SLM 2024 in Riyadh, I had the honor to lecture on non-invasive liver fibrosis tests (NITs) for metabolic-dysfunction-associated steatotic liver disease on behalf of the Global MASH/NASH council led by prof. Zobair Younossi. As a starter, I asked the audience in the lecture hall to indicate their favorite NIT for MASLD by a raise of hands, and FIB4 and FibroScan seemed to be favorites.

### The rationale for the use of NITs in MASLD

The rationale for the use of NITs in MASLD is four-fold. 1) the high prevalence and severity of MASLD. In patients with type 2 diabetes mellitus, the prevalence of advanced MASLD fibrosis may be as high as 15% (Younossi et al, CGH 2024). 2) The reasoning that early diagnosis of fibrosis and subsequent appropriate management can potentially prevent progression to cirrhosis and its complications known to be associated with increasing fibrotic stages of MASLD (Dulai et al, Hepatology 2019), which may justify screening populations at risk. (Younossi, Clin Mol Hep 2024; Sanai, Hepatol Int 2021; Tacke, EASL/EASD/EASO guideline 2024). 3) Conventional non-invasive diagnostics have drawbacks. Conventional liver enzymes (ALAT, ASAT, GT) lack sensitivity. In a study of 1,017 Dutch middle-aged men and women with adiposity/obesity (BMI>25 kg/m<sup>2</sup>) who were selected for liver enzymes within the reference range, the prevalence of MASLD measured with 1H-MRS was as high as 40%. And in 222 patients from the NASH-CRN cohort with normal ALT, the prevalence of MASH was as high as 11%. ALT also can remain normal as MASLD progresses. Conventional ultrasound of the liver does not detect fibrosis (unless F4 – cirrhosis) (Van Son, Medicine 2024; Verma, Liver Int 2013; Rinella, Clin Gastro 2014; Saadeh, Gastroenterology 2002). 4) A reduction of of required liver biopsy, the reference standard for MASLD. Liver biopsy has inherent limitations/downsides, with a certain risk of sampling error, risk of discomfort and complications (bleeding), it has limited scalability and is prone to interobserver variability, especially concerning hepatocyte ballooning, a key requirement for diagnosing MASH (Gilmore, Gut 1995, Seeff, CGH 2010, Brunt et al, JHEP 2022).

## Composite scores of simple biometrics and plasma values

There are three types of NITs for fibrotic MASLD. The first type are composite scores of simple biometrics and plasma values, such as FIB4, NFS and MAF5. FIB4 is based on age, ALAT, ASAT, platelets. A FIB4 of  $< 1.3$  has NPV for  $\geq$  F3-fibrosis 90% and a score  $> 2.67$ : PPV for  $\geq$  F3-fibrosis of 80%. The prognostic value liver complications and mortality: as good as histology: tAUC 5 years 0.74 vs. 0.72. FIB4 is advocated in most guidelines given the large body of evidence, ease of use and affordability. Yet it has limited performance in the low prevalence setting, in T2DM, in morbid obesity, its dependence on age skews outcome and it does not correlate to VCTE (Shah et al, Clin Gastroenterol Hepatol 2009; Barbosa et al, Hep Com 2021; Mozes, Lancet GastroH 2023; Graupera, CGH 2022; Alqahtani, Obes Surg 2021; Driessen, abstract Paris MASH 2024).

The NAFLD Fibrosis Score has comparably good diagnostic performance to FIB4 but requires 6 parameters including albumin, and perhaps therefore has less uptake than FIB4. In a meta-analysis of 13,046 patients with a high percentage of significant fibrosis at 45.0%, and advanced fibrosis at 24.0%, and cirrhosis at 9.4%, the summary AUROC NFS was 0.84, comparable to FIB4. NFS can also predict liver-related events (c-index 0.77, FU 62-110 months). It has the same issues as FIB4 concerning performance in low prevalence setting and in T2DM; its dependence on age may also skew outcome (Xiao, Hepatology 2017

Younes, JHEP 2021, Graupera, CGH 2022). MAF-5 was derived from 30,870 patients, correlated to histological fibrosis grade and mortality, developed in lower prevalence metabolic risk population and requires further validation in cohorts, trials and care paths.

Its advantages over FIB4 are its higher accuracy in young and old and its better congruence with VCTE (AUC 0.81 vs. FIB4 0.61 for LSM  $> 8.0$  kPa) (Van Kleef et al, Gastroenterology 2024).

## Specialized plasma-based scores.

The second type are specialized plasma-based scores, such as ELF, NIS2+, ProC3 and ADAPT and TLM3. The enhanced liver fibrosis test has rule-out cutoff for F3 fibrosis of 7.7 and a rule-in cutoff for F3 fibrosis of 9.8. It consists of hyaluronic acid (HA), tissue inhibitor of metalloproteinases 1 (TIMP-1), amino-terminal propeptide of type III procollagen (PIIINP). It has an AUROC of  $>> 0.80$  (toward 0.90) for advanced fibrosis. It has been validated in plasma as well as in serum, which makes it applicable for reflex two-tiered diagnostic testing when FIB4 is in intermediate range. It also has poorer performance in low prevalence populations, its prognostic value has been demonstrated and it comes at a fairly high cost which may explain why we have seen limited uptake. (Hinkson AP&T 2023 Sanyal, AASLD 2021, Vali, JHEP 2020, Van Son, CCLM 2024).

NIS2+ comprises 2 serum-based biomarkers: mrR-34a and YKL-40. It detects at risk MASH with AUROCs up to 0.813, has consistent performance with increasing age and in T2DM, and could optimize screening for clinical trials and routine practice (Harrison, JHEP 2023).

Pro-C3 and its derived score /ADAPT are based on pro-collagen C3 and capture active fibrogenesis. In a meta-analysis of 1568 patients with significant fibrosis, ProC3 had an AUROC 0.81 (95% CI 0.77–0.84), and in 2058 patients with advanced fibrosis, the AUROC was 0.79 (95% CI 0.73–0.82). ADAPT is based on: PRO-C3 plus age, DM, thrombocytes and reaches AUROCs up to 0.87. There is a high NPV in general population cohort (n=713): 98%. (Mak, Holleboom, Medicines 2022; Daniels Hepatology 2019; Eslam AJG 2021).

TLM3 is a score based on the three plasma biomarkers IGFBP7, SSC4D, SEMA4D correlating to MASH fibrosis, found in Dutch cohorts and validated in the Copenhagen MASLD cohort. It has AUC for F2 of 0.89, and for F3-F4 of 0.87, outperforming FIB4 and VCTE (Verschuren et al, Nature Comm 2024).

### Direct non-invasive liver assessment

The third group is direct non-invasive liver assessment. Firstly there is VCTE Vibration controlled transient elastography (FibroScan®). The cut-off to rule out F3: 8 kPa and to rule it in is 12 kPa, with AUROCs > 0.80. It is recommended in all major guidelines given body of evidence including prognostic value. No specialized personnel is required and it has a significant point-of-care effect. (Kwok, AP&T 2014; Lin, JAMA 2024; Eddowes, Gastroenterology 2019; Mozes, ..., Holleboom, ... Pavlides, Lancet GastroHep 2023). The VCTE based FAST score, derived from 9 international cohorts and a total of 1376 patients also incorporates AST to track at risk-MASH, defined as elevated NAFLD activity score (NAS $\geq$ 4), and advanced fibrosis (stage 2 or higher [F $\geq$ 2]). In the derivation dataset, it had a C-statistic of 0.80, 95% CI 0.76–0.85, and in the validation cohorts of 0.74–0.95, 0.85; 95% CI 0.83–0.87. The cutoff is 0.35 to rule out at risk MASH, and 0.67 to rule in (Newsome, Lancet GastroHep 2020).

Shear wave elastography (SWE) was investigated in 577 patients suspected of MASLD 2D-SWE had an AUC for advanced fibrosis of 0.88, compared to FIB-4 0.74 and VCTE 0.82.

FIB-4 followed by 2D-SWE versus had comparable diagnostic performance to FIB-4/VCTE, with sensitivity 71.4% versus 66%; specificity of 91.4% versus 91.5% and accuracy of 83.7% and 81.4% (Cassinotto, Hepatology 2021). 2D-SWE requires more trained personell then VCTE and is less scalable then e.g. FIB4 or even VCTE or pSWE.

Concerning MR-based imaging of MASLD, a meta-analysis of 64 studies and 14,609 patients found that MR elastography (MRE) had an sAUC for advanced fibrosis of 0.92, versus 0.85 for VCTE. For cirrhosis, this was 0.90 versus 0.89, and the sAUC for MASH was 0.83 for MRE. MRE has significantly lower intra- and interobserver variability than VCTE, yet it requires specialised hardware for wave generation and acquisition which limits its availability. There is also LiverMultiScan, including PDFF for steatosis and cT1 which captures fibroinflammation by estimating extracellular space. (Selvaraj, JHEP 2021; Imajo, CGH 2022; Andersson, CGH 2022; Pavlides, JHEP 2016). MAST is a formula based on MRE + MRI-PDFF + AST, to identify fibrotic MASH. In a cohort study (derivation n=103; validation n=244) it reached an AUC 0.93; 95% CI 0.88-0.97, higher than FAST and also fewer patients with indeterminate scores than FIB4 and NFS (Noureddin, JHEP 2022).

### **NITs for MASLD - concluding remarks and future direction:**

There has been a tremendous increase in understanding of NITs for MASLD in recent years. All NITs have their particular pros but also some cons. Yet as MASLD disease burden is significant, there is an immediate need to increase timely case finding by use of NITs, which can likely reduce disease burden, esp. with advent of pharmacotherapy. Which exact combination of NITs is dependent on the care setting, cost and availability. The field has an assignment in identifying and validating NITs with a better diagnostic performance in the low prevalence setting, where MAF5 and ADAPT are promising but require further validation. The field also needs to better establish the dynamics of NITs upon treatment response. Thirdly, an improvement of histological reference standard is required for these validations and there the developments in digital liver pathology driven by AI are key.



# Pediatric Hepatology Course Highlights



## Dr. Muhannad AlRuwaithi

Consultant Pediatric Gastroenterologist  
King Fahad Medical City

The latest **Saudi Society for the Study of Liver Diseases and Transplantation (SASLT) Meeting** marked a significant milestone with the launch of the Pediatric Hepatology Board Review Course, a ground-breaking program and the first of its kind in the region. Attendees received specialized training through this innovative course, designed to enhance knowledge and expertise in pediatric hepatology, a crucial area for those pursuing board certification and advancing care in pediatric liver disease.

Held alongside the main SASLT conference, the Pediatric Hepatology Board Review Course was developed to address the growing need for hepatologists with a pediatric focus. Delivered by distinguished speakers in the field of hepatology, the course featured interactive lectures, case-based discussions, and multiple-choice question (MCQ) review sessions, covering an array of topics essential for anyone practicing or specializing in pediatric hepatology. Highlights included sessions on liver transplantation, metabolic liver diseases, acute liver failure, and complex hepatobiliary disorders, providing a well-rounded exploration of both common and rare liver conditions in children.

Evidence based guidelines and clinical best practices were heavily emphasized to make the information gained as directly applicable to daily practice as possible. Attendees also had the opportunity to expand their network —meeting local and international leaders in hepatology,

as well as other colleagues who face similar challenges in caring for children with liver disease. Attendee feedback has been more than positive. A lot of them said that towards the end they also felt more confident and much clearer on some of the complex areas of pediatric hepatology which particularly helped them to work out how to maneuver their way around this tricky specialty. Due to the success of this course, SASLT wishes to make this Pediatric Hepatology Board Review Course an annual event due to its benefits for pediatric hepatology fellows. This course has raised the bar for training in pediatric liver disease with its high-level content, providing participants a greater understanding of best practices and will continue to be an important tool for optimizing hepatology care both in the Kingdom as well as other regions.



## Reflections on the Saudi Liver Meeting 2024: Insights from the Global NASH Council



### Dr. Bader AlDahash

Gastroenterology Fellow  
King Faisal Specialist Hospital and Research Centre  
Internal Medicine Board Certified Graduated from  
KFSH & RC

As a GI fellow and a proud member of the Saudi Society for the Study of Liver Diseases and Transplantation (SASLT), attending the Saudi Liver Meeting 2024 was an enriching experience that deepened my understanding of non-alcoholic steatohepatitis (NASH). The highlights of the conference undoubtedly included presentations from the Global NASH Council, which offered valuable insights into the evolving landscape of NASH research and management

#### **A Unified Approach to NASH**

The Global NASH Council, comprised of leading experts from around the world, has been instrumental in tackling the growing challenges posed by NASH. Their collective aim is to foster collaboration among researchers, clinicians, and stakeholders in an effort to improve outcomes for patients suffering from this complex liver disease. The lectures I attended underscored the importance of understanding the pathophysiology of the disease to identify more effective therapeutic interventions.

#### **Insights into Recent Advances**

The sessions presented by the Global NASH Council were not only informative but also inspiring. I learned about recent advances in NASH research, including promising biomarkers that could revolutionize early detection and treatment monitoring.

Hearing firsthand about ongoing studies and the Council's collaborative efforts reinforced my belief in the necessity of a unified approach to this urgent health concern.

## Looking Forward

As I reflect on the rich discussions and presentations, I am filled with optimism about the future of NASH research and management. The Global NASH Council's commitment to exploring novel therapies and enhancing patient education is a promising direction. I am particularly excited about the potential for multidisciplinary approaches that bring together experts from various fields, including nutrition and endocrinology, to offer comprehensive care for NASH patients.

Attending the Saudi Liver Meeting 2024 and gaining insights from the Global NASH Council has solidified my understanding of the complexities surrounding non-alcoholic steatohepatitis. Their dedication to advancing research, improving clinical practices, and fostering collaboration is essential for tackling this pressing health issue.

As a member of the medical community, I am inspired to engage with these initiatives and contribute to the ongoing fight against NASH. Together, we can make a significant impact on global public health and improve the lives of those affected by this preventable disease. The lessons learned at the conference will undoubtedly shape my approach to patient care and my involvement in future research endeavors.



## Spotlight on the Abstract Contest at Saudi Liver Meeting 2024: Recognizing Innovation in Liver Disease Research



### Dr. Mohammed Yousef Alghamdi

Consultant in Internal Medicine, Gastroenterologist,  
Transplant Hepatologist  
Director of Medicine at King Fahd Military Medical Complex  
(KFMMC) in Dhahran,. Executive Director for Training Sector 3,  
covering the Eastern Province, Dubai, and Bahrain.

The recently concluded Saudi Liver Meeting 2024 (SLM 2024), held from October 17-19 at the Simulation and Skills Development Center, Princess Noura University in Riyadh, showcased some of the most cutting-edge research in liver disease and transplant medicine. Organized by the Saudi Society for the Study of Liver Diseases and Transplantation (SASLT), this premier event brought together experts, practitioners, and researchers from around the world, making it a significant platform for knowledge exchange in the fields of hepatology, gastroenterology, and liver transplantation. A highlight of SLM 2024 was the Abstract Contest, a competitive platform that spotlighted groundbreaking research submissions. This competition underscored the commitment of the Saudi Liver Meeting to foster research excellence and promote emerging innovations in liver disease management. Researchers from across Saudi Arabia and beyond submitted abstracts covering a diverse range of topics, from basic liver disease mechanisms and epidemiology to advanced diagnostic techniques and liver transplantation strategies.

### The Abstract Competition: Fostering Research Excellence in Hepatology

The Abstract Contest provided a space for researchers to showcase their findings and receive feedback from peers and experts in hepatology. This initiative is integral to the Saudi Liver Meeting, helping identify promising research that could impact clinical practices, improve patient outcomes, and inspire future studies. Each submission was meticulously reviewed by a panel of experts, ensuring that only the most significant, well-conceived studies were selected for awards.

Out of 24 abstract submissions, three abstracts emerged as winners, setting themselves apart with innovative approaches, rigorous methodologies, and impactful insights into the future of liver disease management. The judging criteria focused on several key factors, including scientific novelty, clinical applicability, research quality, and overall contribution to the field.

I would like to thank my colleagues **Dr. Faisal Sanai** and **Dr. Hadi Kuriry** for their support and for helping us in the evaluation and selection of the winners for this abstract contest.

## **The Winning Abstracts: Pioneering Advances in Liver Disease Research**

**1. First Place:** Metabolic Dysfunction-Associated Steatotic Liver Disease research in the Arab Region: output, collaboration and funding impact compared to global levels (2014-2023).

### **Metabolic dysfunction-associated steatotic liver disease research in the Arab region: Output, collaboration, and funding impact compared to global levels (2014–2023)**

Waleed Alhazzani<sup>1,2,3</sup>, Shadan AlMuhaidib<sup>4</sup>, Haifa F. Alotaibi<sup>1</sup>, Waleed S. Alomaim<sup>5</sup>, Rawan Alqahtani<sup>6</sup>, Faisal M. Sanai<sup>7</sup>, Faisal Abaalkhail<sup>8,9</sup>, Saleh A. Alqahtani<sup>10,11</sup>

#### **Background:**

Metabolic dysfunction-associated steatotic liver disease (MASLD) presents a significant global health challenge, with the Arab region showing nearly double the average age-standardized prevalence compared to the global prevalence. We aim to evaluate MASLD research output, collaboration patterns, and funding impact in the Arab region over the last decade. Our objective is to correlate MASLD-related publications with factors like gross domestic product (GDP), age-standardized prevalence, and population size, and to compare research impact and funding in the Arab region with global levels.

#### **Methods:**

We conducted a bibliometric analysis of MASLD research in 22 Arab countries from 2014 to 2023 using Clarivate Analytics' InCites, with MASLD prevalence extracted from the Global Burden of Disease data and country-specific population counts and economic information from the World Bank. We assessed MASLD-related publications, prevalence, collaboration patterns, and citation and funding impact.



## Results:

Between 2014 and 2023, Arab countries contributed 844 publications, accounting for 3.3% of global MASLD research. We identified positive correlations between MASLD-related publications and GDP ( $r_s = 0.825$ ,  $p < 0.001$ ), age-standardized prevalence ( $r_s = 0.627$ ,  $p = 0.002$ ), and population size ( $r_s = 0.509$ ,  $p = 0.016$ ). About 48.7% of these publications involved international collaborations, yielding a citation impact of 15.7, compared to a global citation impact of 23.7. Arab-funded MASLD-related publications accounted for 19.4% of all MASLD publications in the Arab world, versus 42.3% that are globally funded. Arab-funded publications showed similar citation impact (30.6) to globally funded publications (30.3). However, 47.8% of the MASLD publications from the top 10 countries globally with highest GDP received funding, and yielded a citation impact of 33.5.

## Conclusions:

Despite the high prevalence of MASLD in Arab countries, research output, impact, and funding are lower than global levels. Addressing this disparity requires collaborative efforts and increased investment in MASLD research within the Arab region.

**2. Second Place:** Transarterial Chemoembolization offers survival advantage over radioembolization in Early-stage unresectable hepatocellular carcinoma.

### **Transarterial Chemoembolization Offers Survival Advantage Over Radioembolization in Early-stage Unresectable Hepatocellular Carcinoma**

Faisal M. Sanai 1, Adnan Alzanbagi 2, Mohammed Arabi 3, Safiya Ibn Awadh 4, Sarah S. Alfawaz 1, Mohammed Almatrafi 1, Abdulmalik M. Alsabban 1, Talal M. Alotaibi 3, Khairat H. Alameer 3, Shadi Saleem 5, Saad Abualganam 5, Khalid I. Bzeizi 6, Abdulaziz M. Tashkandi 2, Noha H. Guzaiz 7, Nesreen H. Abourokbah 8, Hassan O. Alfakieh 1, Majed Almaghrabi 1, Saad Aldosari 1, Azzam Khankan 8, Saleh A. Alqahtani 6,9

## Background:

Transarterial radioembolization (TARE) with Yttrium-90 resin microspheres is an established treatment option for patients with unresectable hepatocellular carcinoma (HCC). However, clinical efficacy and optimizing treatment application over transarterial chemoembolization (TACE) remain challenging.

## Methods:

All consecutive, unselected patients undergoing treatment with TARE (n=106) or TACE (n=176) at four academic institutions were reviewed retrospectively. Those with metastatic disease or with high-grade locally advanced (Vp3/4 portal vein invasion) disease, had non-selective TARE or TACE, or with Child-Pugh (CP) class C disease were excluded. Patient characteristics and treatment-related data were collected at baseline; adverse events and time-to-event data (median overall survival [mOS], and objective response rates [mRECIST]) were collected over a median follow-up duration of 27 (interquartile range [IQR] 13-50) months.

## Results:

The mean age of the overall cohort was 66.8 ± 10.5 years and 209 (73.9%) were male. More BCLC 0/A patients received TACE (42.9%) vs. TARE (29.3%). The mOS was longer in HCC patients undergoing TACE (40.0 months) vs. TARE (24.2 months; hazard ratio [HR] 1.70, 95% CI:1.2-2.5, P=0.006). BCLC 0/A patients receiving TACE had longer mOS (61.2 vs. 25.0 months; HR 2.2 [95% CI:1.1-4.5], P=0.029). Although longer survival was seen with TACE in BCLC B patients (38.1 vs. 24.0 months), this did not reach statistical significance (HR 1.4, 95% CI:0.9-2.3, P=0.143). The TACE group showed a higher complete response rate (57 [32.8%] vs. 22 [20.8%]; P=0.0015) but similar rates of progressive disease (32 [18.4%] vs. 20 [18.9%]) than patients in the TARE group.

## Conclusions:

TACE is superior to TARE in treating HCC patients, particularly in early-stage disease with improved OS and objective response rates. The utilization of TARE as a treatment option in early or intermediate-stage HCC must be evaluated in larger, randomized, controlled clinical trials.



### 3. Third Place: Experts' Evaluation of ChatGPT MASLD Queries in Arabic

#### Experts' Evaluation of ChatGPT MASLD Queries in Arabic

Saleh A. Alqahtani<sup>1,2</sup>, Reem S. AlAhmed<sup>3</sup>, Waleed S. AlOmair<sup>4</sup>, Saad Alghamdi<sup>5</sup>, Waleed K. Al-Hamoudi<sup>5</sup>, Khalid I. Bzeizi<sup>5</sup>, Ali Albenmoussa<sup>5</sup>, Alessio Aghemo<sup>6</sup>, Nicola Pugliese<sup>6</sup>, Cesare Hassan<sup>6</sup>, Faisal A. Abaalkhail<sup>7,8</sup>

#### Background and Aims:

Metabolic dysfunction–associated steatotic liver disease (MASLD) has become increasingly prevalent in recent years due to the rise in obesity and unhealthy lifestyle choices. Artificial intelligence (AI)-powered chatbots, such as Chat Generative Pretrained Transformer (ChatGPT), have shown promising results in healthcare. The present study aimed to explore the potential use of ChatGPT-generated medical Arabic responses for patients with MASLD.

#### Method:

This cross-sectional study firstly involved the Arabic translation of a validated English patient questionnaire on MASLD. Second, the Arabic questions were entered in the ChatGPT 3.5 platform on November 12, 2023. Third, the responses were evaluated for accuracy, completeness, and comprehensiveness by 10 MASLD experts from Saudi Arabia who were native Arabic speakers. Different Likert scales were used to evaluate the three domains: 1) Accuracy: 6-point Likert scale (Correct, Nearly all correct, More correct than incorrect, Approximately equally correct and incorrect, More incorrect than correct, and Completely incorrect), 2) Completeness: 3-point Likert scale: (Incomplete, Adequate, and Comprehensive), and 3) Comprehensiveness: 3-point Likert scale: (Difficult, Partly difficult, and Easy to understand). An additional question was added to the Arabic questionnaire to capture any comments regarding the generated responses.

#### Results:

The mean accuracy score was 4.9 on a 6-point Likert scale corresponding to “Nearly all correct.” Kendall’s coefficient of concordance (KCC) ranged from 0.649 to 0.025, with a mean of 0.28, indicating moderate agreement between all ten experts. The mean completeness score was 2.4 on a 3-point Likert scale corresponding to “Comprehensive” (KCC: 0.553 - 0.03; mean: 0.22). The average comprehensibility score was 2.74, which indicates that the ChatGPT generated responses were “Easy to understand” (KCC: 0.553 - 0.03; mean: 0.22).

#### Conclusion:

Arabic-speaking experts in hepatology found that ChatGPT-generated medical Arabic responses for patients with MASLD were accurate, complete, and comprehensive.

