PathAI

Liver Disease Publications

Advancing the understanding of Liver Disease through Digital Pathology

Manuscripts

2024

AI-based automation of enrollment criteria and endpoint assessment in clinical trials in liver diseases
Iyer et al., *Nature Medicine*

Analytical and Clinical Validation of AIM-NASH: A Digital Pathology Tool for Artificial Intelligence-based Measurement of Nonalcoholic Steatohepatitis Histology
Pulaski et al., *medRxiv*

2023

Artificial intelligence scoring of liver biopsies in a phase II trial of semaglutide in nonalcoholic steatohepatitis
Ratziu et al., *Hepatology*

Clinical trial: Effects of pegozafermin on the liver and on metabolic comorbidities in subjects with biopsy-confirmed nonalcoholic steatohepatitis
Alkhouri et al., *Alimentary Pharmacology and Therapeutics*

Validation of Digital Pathology Platform for Metabolic-Associated Steatohepatitis for Clinical Trials
Pulaski et al., *medRxiv*

Integration of deep learning-based histopathology and transcriptomics reveals key genes associated with fibrogenesis in patients with advanced NASH
Conway et al., *Cell Reports Medicine*

2021

A Machine Learning Approach to Liver Histological Evaluation Predicts Clinically Significant Portal Hypertension in NASH
Bosch et al., *Hepatology*

Manuscripts

A Machine Learning Approach Enables Quantitative Measurement of Liver Histology and Disease Monitoring in NASH
Taylor-Weiner et al., *Hepatology*

2020

Combination therapies including cilofexor and firsocostat for bridging fibrosis and cirrhosis due to NASH
Loomba et al., *Hepatology*

Oral Presentations

2024

AI/ML-assisted reproduction of traditional pathology: where do we stand?
Beck, *NASH Tag*

2023

Toward validated platforms and AI-powered digital pathology tools for evaluation of NASH histology in clinical trials
Iyer and Wack, *The Liver Forum*

Artificial intelligence-powered detection and characterization of fibrosis in liver histology
Murray, *American Society for Investigative Pathology*

Analytical and clinical validation of AIM-NASH, a digital pathology tool for artificial intelligence-based measurement of nonalcoholic steatohepatitis histology
Harrison et al, *EASL International Liver Conference*

Artificial intelligence-based assessment of liver pathology in alpha-1 antitrypsin deficiency
Iyer et al, *Biomarker and Clinical Drug Development in AAT – Opportunities and Challenges*

2022

Exploratory analyses of NASH histology using CRN scores derived from a multi-stain machine learning method
Abel et al., *AASLD Annual Meeting*

2021

AI-based histologic measurement of NASH (AIM-NASH): a drug development tool for assessing clinical trial endpoints
Carrasco-Zevallos et al., *EASL International Liver Conference*

Oral Presentations

AI-based assessment of NASH histology for treatment, monitoring, and risk stratification
Carrasco-Zevallos et al., *FNIH*

AI-powered analysis of NASH pathology: integration into NASH clinical development
Beck et al., *NASH Tag*

2020

Machine learning enables quantitative assessment of histopathologic signatures associated with ALT normalization in chronic hepatitis B patients treated with tenofovir disoproxil fumarate (TDF)
Shukla et al., *AASLD Annual Meeting*

AI-powered computational pathology for liver diseases
Carrasco-Zevallos et al., *The Liver Forum*

Safety and efficacy of combination therapies including cilofexor/firsocostat in patients with bridging fibrosis and cirrhosis due to NASH: results of the phase 2b ATLAS trial
Loomba et al., *EASL International Liver Conference*

2019

Machine learning models accurately interpret liver histology in patients with nonalcoholic steatohepatitis (NASH)
Pokkalla et al., *AASLD Annual Meeting*

Posters

2024

Artificial intelligence-derived granular histological markers of fibrosis from hematoxylin and eosin-stained whole slide images associate with non-invasive tests of fibrosis and prognosis to cirrhosis in patients with metabolic dysfunction-associated steatohepatitis
Patel et al., *EASL International Liver Conference*

Artificial intelligence models deployed at scale on hematoxylin and eosin-stained whole slide images reveal stage-dependent collagen composition in metabolic dysfunction-associated steatohepatitis
Gerardin et al., *EASL International Liver Conference*

Artificial Intelligence-based Measurement of Nonalcoholic Steatohepatitis is An Accurate Tool for Clinical Trial Enrollment and Endpoint Assessment
Pulaski et al., *EASL International Liver Conference*

Integrated spatial transcriptomics and machine learning-derived histopathology measurements in steatotic liver disease unmasks biological heterogeneity of steatosis
Frigerio et al., *EASL International Liver Conference*

2023

Artificial Intelligence-based Measurement of NASH Histology (AIM-NASH) recapitulates primary results from Phase 3 study of resmetirom for treatment of NASH/MASH with liver fibrosis
Iyer et al., *AASLD Annual Meeting*

AI-based cellular-level characterization of tissue microarchitecture in non-alcoholic steatohepatitis
Patel et al., *AASLD Annual Meeting*

Machine learning-enabled collagen detection in H&E–stained tissue enables concordant manual fibrosis staging in metabolic dysfunction-associated steatohepatitis (MASH)
Zhang et al., *AASLD Annual Meeting*

Posters

Artificial Intelligence-based Measurement of Non-Alcoholic Steatohepatitis (AIM-NASH) Improves Individual Pathologists Accuracy and Decreases Inter-Pathologist Variability in NASH Assessment
Loomba et al., *AASLD Annual Meeting*

Characterizing the histologic implications of resmetirom-induced liver volume reduction using artificial intelligence-powered digital pathology
Mistry et al., *EASL International Liver Conference*

2022

Variability in Liver Biopsy Assessment: Data from the Pegozafermin Phase 1b/2a Study in Subjects with Non-Alcoholic Steatohepatitis (NASH)
Loomba et al., *AASLD Annual Meeting*

Steatosis reduction assessed by MRI-PDFF was consistent with ML evaluation in patients with NASH cirrhosis
Loomba et al., *AASLD Annual Meeting*

Comparison of the effects of semaglutide on liver histology in patients with non-alcoholic steatohepatitis cirrhosis between machine learning model assessment and pathologist evaluation
Loomba et al., *AASLD Annual Meeting*

Quantitative Multimodal Anisotropy Imaging enables machine learning prediction of NASH CRN fibrosis stage without manual annotation
Tahir et al., *AASLD Annual Meeting*

Retrospective AI-based Measurement of NASH Histology (AIM-NASH) Analysis of Biopsies From Phase 2 Study of Resmetirom Confirms Significant treatment-induced Changes in Histologic Features of Nonalcoholic Steatohepatitis
Harrison et al., *EASL International Liver Conference*

Machine learning-enabled continuous scoring of histologic features facilitates prediction of clinical disease progression in patients with non-alcoholic steatohepatitis
Iyer et al., *EASL International Liver Conference*

Posters

Quantitative multimodal anisotropy imaging enables automated fibrosis assessment of H&E-stained tissue
Zhang et al., *EASL International Liver Conference*

2021

Comparison of manual vs machine learning approaches to liver biopsy scoring for NASH and fibrosis: a post hoc analysis of the FALCON 1 study
Shevell et al., *AASLD Annual Meeting*

Minimizing Variability and Increasing Concordance for NASH Histological Scoring in NASH Clinical Trials
Sanyal et al., *AASLD Annual Meeting*

Artificial intelligence-powered digital pathology model supports that fibrosis is reduced by semaglutide in patients with NASH
Harrison et al., *AASLD Annual Meeting*

Liver Biopsy Graph Neural Networks for Automated Histologic Scoring using the NASH CRN System
Wang et al., *EASL International Liver Conference*

A Deep Learning Approach to Analysis of MRCP Images Predicts Clinical Events and Progression to Cirrhosis in Patients With Primary Sclerosing Cholangitis
Prakash et al., *EASL International Liver Conference*

Quantitative Assessment of NASH Pathologies in 152 Baseline H&E Slides from a Phase 2 trial using PathAI Machine Learning Algorithm
Cable et al., *NASH Tag*

2020

Machine Learning Based Quantification of Histology Features from Patients Treated for Chronic Hepatitis B Identifies Features Associated with Viral DNA Suppression and HBeAg Loss
Shukla et al., *AASLD Annual Meeting*

Integration of Machine Learning-Based Histopathology and Hepatic Transcriptomic Data Identifies Genes Associated With Portal Inflammation and

Posters

Ductular Proliferation as Predictors of Disease Progression in Advanced Fibrosis Due to NASH
Pouryahya et al., *AASLD Annual Meeting*

Validation of a Machine Learning-Based Approach (DELTA Liver Fibrosis Score) for the Assessment of Histologic Response in Patients with Advanced Fibrosis due to NASH
Taylor-Weiner et al., *AASLD Annual Meeting*

A Machine Learning Model Based on Liver Histology Predicts the Hepatic Venous Pressure Gradient in Patients With Compensated Cirrhosis Due to Nonalcoholic Steatohepatitis
Bosch et al., *AASLD Annual Meeting*

Machine Learning Identifies Histologic Features Associated With Regression of Cirrhosis in Treatment for Chronic Hepatitis B
Juyal et al., *EASL International Liver Conference*

Machine Learning Models Accurately Interpret Liver Histology and Are Associated With Disease Progression in Patients With Primary Sclerosing Cholangitis
Travis et al., *EASL International Liver Conference*

Machine Learning Models Identify Novel Histologic Features Predictive of Clinical Disease Progression in Patients With Advanced Fibrosis Due to Nonalcoholic Steatohepatitis
Pokkalla et al., *EASL International Liver Conference*

2019

Machine Learning Fibrosis Models Based on Liver Histology Images Accurately Characterize the Heterogeneity of Cirrhosis Due to Nonalcoholic Steatohepatitis
Younossi et al., *AASLD Annual Meeting*