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ANNEX

Part 1: Recent publications in 2019 with mentions of HistoIndex's SHG Microscopy in liver diseases only

1. **Digital Pathology: What is the Future?**
   V. Paradis, A. Quaglia. Journal of Hepatology. May 2019, Volume 70, Issue 5, Pages 1016–1018.

2. **Improved Quantitative Assessment of HBV-associated Liver Fibrosis Using Second Harmonic Generation Microscopy with Feature Selection**
   C.-Y.Hsiao, X.Teng, T.-H.Su. P.-H.Lee, J.-H.Kao, K.-W.Huang. ScienceDirect, Clinics and Research in Hepatology and Gastroenterology, 7 May 2019.

3. **qBallooning: Automated Image Detection for Ballooning Degeneration in Non-alcoholic Steatohepatitis (NASH)**
   Wei-Qiang Leow, Wei Keat Wan, Josh Jie Hua Loh, Syed Muhammad Fahmy Alkaff, Dean C.S. Tai, Yayun Ren, George Boon-Bee Goh, Chee Kiat Tan, Pik Eu Chang, Kiat Hon Lim. 51. S89-S90. 10.1016/j.pathol.2018.12.236.

4. **MRI-PDFF Response in MGL-3196 and Placebo Treated Patients Predicts Reduction in Ballooning and Inflammation Components of NAS and NASH Resolution in a 36-week Serial Liver Biopsy Study**
   Stephen A. Harrison, Mustafa R. Bashir, Cynthia Guy, Rebecca Taub. Poster Presentation (SAT-347), EASL 2019.

5. **The Glucocorticoid Antagonist ST001 Prevents Development of NASH and Improves Aspects of the Metabolic Syndrome in the DIAMOND™ Mouse Model**
   Rebecca Caffrey. Poster Presentation (PS-129), EASL 2019.

6. **Long-Term Obeticholic Acid Treatment is Associated With Improvements in Collagen Morphometry in Patients With Primary Biliary Cholangitis**
   Andreas E. Kremer, Christopher L. Bowlus, Pierre Bedossa, Albert Parés, Lisa M. Forman, Joost P.H. Drenth, Stephen Ryder, Luigi Terracciano, Yuying Jin, Alexander Liberman, Richard Pencek, Leigh MacConell, Paul J. Pockros. Poster presentation (FRI-033), EASL 2019.

7. **Morphometric Collagen Analysis Discerns Anti-fibrotic Effects of INT-767 and OCA in NASH Mouse Models Using Second Harmonic Generation Imaging**
   Li Chen, Mathieu Petitjean, Luciano Adorini, Jonathan Roth. Poster presentation (SAT-342), EASL 2019.

8. **Quantification of Hepatic Steatosis in Chronic Liver Disease using Novel Automated Method of Second Harmonic Generation and Two-photon Excited Fluorescence**
   George Boon-Bee Goh, Wei Qiang Leow, Shen Liang, Wei Keat Wan, Tony Kiat Hon Lim, Chee Kiat Tan & Pik Eu Chang. Scientific Reports (2019) 9:2975.

9. **A Quantitative Method (qVessel) Analysis: The Characteristics of Hepatic Vascular Changes in Different Causes**
   Zheng Xin Li, Zhao Zhi Min, Cheng Hai Liu, Ya Yun Ren, Xiao Teng, Dean Tai. Poster Presentation, APASL 2019.

10. **Comparison of Various Quantitative and Qualitative Collagen Analysis Methods in Early Liver Fibrosis**
    Reinout Stoop, Martine Morrison, Serene Lek, Arianne van Koppen, Lars Verschuren, Nicky van Trigt, Natascha van Lent, Roeland Hanemaaijer. Keystone Symposia 2019; Integrated Pathways of Disease in NASH and NAFLD.

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Part 2: NAFLD in India

Adult Data

- **NAFLD Prevalence in general population: 8.7 to 32 %**

Table 1 Prevalence Data of Non-alcoholic Fatty Liver Disease in the General Population of India.

Author and year	No./type of patients	Diagnostic method for hepatic steatosis	Comments
Singh et al 2004[25]	159 healthy subjects	Liver ultrasonography	Fatty liver in 39 (24.5%, M: 26.9%, F: 13.8%)
Amarapurkar et al 2007[26]	1168 healthy subjects	Liver ultrasonography	NAFLD is 16.6%; age > 40, central obesity Male, BMI > 25↑ AST/ALT
Mohan V et al—Urban South India 2009[27]	541 subjects	Liver ultrasonography	32% (173/541 subjects) (M: 35.1%, F: 29.1%)
Das et al—Rural West Bengal 2010[28]	n = 1911	Liver ultrasonography and blood sampling	NAFLD, NAFLD with elevated alanine aminotransferase, and cryptogenic cirrhosis was 8.7%, 2.3%, and 0.2%, respectively; M:F = 1.1:1 ↑ income, BMI FBS > 100 central obesity

25 Prevalence of nonalcoholic fatty liver disease in coastal eastern India: a preliminary ultrasonographic survey

26 Prevalence of non-alcoholic fatty liver disease: population-based study

27 Prevalence of non-alcoholic fatty liver disease in urban south Indians in relation to different grades of glucose intolerance and metabolic syndrome

28 Nonobese population in a developing country has a high prevalence of nonalcoholic fatty liver and significant liver disease

- **Latest NAFLD Studies: 30.7 to 55.1%**

Author/Year	Number of Subjects	Diagnostic Method	Prevalence
Duseja et al 2019, JGH Open Chandigarh[29]	986 Healthy Male Adult Blood Donors	USG based	**55.1 %**
Majumdar et al, AIIMS, Delhi Indian Journal of Public Health[30]	176 adults (Random Rural Population)	USG based	**30.7 %**

29 High prevalence of non-alcoholic fatty liver disease among healthy male blood donors of urban India

30 Prevalence of Nonalcoholic Fatty Liver Disease in an Adult Population in a Rural Community of Haryana, India

- **NASH in Indian Adults**

Author/Year	Number of subjects	Diagnostic Method	Prevalence
Das et al; 2010 Hepatology, Rural West Bengal[28]	1911	USG + CT USG + CT + ALT Biopsy proven NASH	8.7 % (NAFL) **2.3 % (Likely NASH)** **6.5 % of NAFL**
Rastogi et al, APMIS 2017, ILBS, New Delhi[31]	1,000 Suspected NAFLD	Liver Biopsy (NASH CRN Score >5)	61.8 % of total NAFLD

28 Nonobese population in a developing country has a high prevalence of nonalcoholic fatty liver and significant liver disease

31 Non-alcoholic fatty liver disease - histological scoring systems: a large cohort single - center, evaluation study

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- **Pediatric NAFLD Indian Data (No Biopsy proven NASH Data)**

Study	Region	Subjects (n)	Method	Prevalence
Parry et al 2012 J Metabolic Synd[32]	Srinagar, India	1112	USG	**7.4 % (Overall NAFLD)** • 44.4 % (Metabolic Syndrome) • 61 % (Obese)
Das M et al Indian Pediatrics 2017[33]	Haryana, India	959	USG USG + High ALT	**22.4 % (Overall NAFLD)** • 18.9% in normal-weight • 45.6% in overweight **10.4 % of NAFLD (? NASH)**
Sood et al Indian Pediatrics 2018[34]	ILBS, Delhi	69 NAFLD	USG + High ALT	**71 % of NAFLD (? NASH)**
Jain et al IJMR 2018[35]	AIIMS, Delhi	218 Overweight Adolescents	USG USG + High ALT	**62.5 %** **78 % of NAFLD (? NASH)**

32 The Prevalence of Non-alcoholic Fatty Liver Disease and its Association with Metabolic Syndrome and Obesity in Pediatric Population of North India

33 Prevalence of nonalcoholic fatty liver disease in normal-weight and overweight preadolescent children in Haryana, India

34 Study of Family Clustering and PNPLA3 Gene Polymorphism in Pediatric Non Alcoholic Fatty Liver Disease

35 Prevalence, clinical & biochemical correlates of non-alcoholic fatty liver disease in overweight adolescents

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