An update on NAFLD and NASH in Asia

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Objectives

Non-alcoholic fatty liver disease (NAFLD) is the most overwhelming liver disease in Asia, has a progressive disease course even in patients with its "benign" form, nonalcoholic fatty liver (NAFL), and may also affect extra-hepatic organs. Of note, issues related to its impact on the outcomes and management of viral hepatitis remain to be elucidated.

Table 1. Studies of non-alcoholic fatty liver disease and viral hepatitis in Asia

Authors	Country	Diagnosis	Populations	Findings
Wong VW, et al. 2012	Hong Kong	^{1}H-MRS	1,013 subjects (91 HBV patients and 922 controls)	The prevalence of NAFLD was 13.5% in HBV patients and 28.3% in controls (p=0.003).
Liu, CJ et al. 2005	Taiwan	Biopsy	95 Taiwanese patients infected with either HCV genotype 1 (n = 57) or 2 (n = 38), receiving interferon alone (n = 41) or in combination with ribavirin (n=54) therapy	Steatosis and steatohepatitis were present in 44 (46%) and 4 (4%) patients. Steatosis was associated with hyperglycemia, hypertriglyceridemia, and BMI ≥27, but not HCV genotype or viral load. The grade of steatosis correlated well with the number of MetS parameters.
Hsieh MH, et al. 2007	Taiwan	Biopsy	425 HCV-viremic patients	Hepatic steatosis was observed in 30.8% of patients. Patients with a BMI <23 kg/m^2 had a lower rate (18.9%) of hepatic steatosis. BMI is the strongest risk factor associated with hepatic steatosis, followed by hepatic fibrosis and TG level.
Wang CC, et al. 2007	Taiwan	US	507 subjects (50 HBV patients) <60 years-old for health check-up	HBV carriers had significantly higher ALT and AST levels. HBV carriers were not associated with IR and ultrasonographic FL.

Abbreviations: FL, fatty liver; NASH, nonalcoholic steatohepatitis; US, ultrasonography; CT, computed tomography; BMI, body mass index; ALT, alanine aminotransferase; AST, aspartate aminotransferase; TG, triglyceride; TC, total cholesterol; LDL, low-density lipoprotein cholesterol; FBS, fasting blood sugar; FPG, fasting plasma glucose; HOMA-IR, homeostatic model assessment of insulin resistance; MetS, metabolic syndrome; WC, waist circumference; DM, diabetes mellitus; H-MRS, proton-magnetic resonance spectroscopy; TE, transient elastography; CHC, chronic hepatitis C; GGT, gamma-glutamyl transpeptidase.

Methods

Studies relevant to the emerging data of NAFLD in Asia, including the diagnosis, risk factors, the assessment and management of Asian NAFLD patients were searched from PubMed, Ovid MEDLINE, and the Cochrane Library database till August 2016.

Results

NAFLD affects 2.04%-52% of adults across the Asian countries. Although liver histology remains the gold standard for the diagnosis of NAFLD and NASH, the prevalence of NASH is 34.3%-40.9% in Asia when defined with ultrasonography and raised liver enzymes. Older age, male gender, abdominal obesity, glucose intolerance, T2DM, dyslipidemia, components of metabolic syndrome, homeostasis model assessment-insulin resistance, and hyperuricemia, but not virological factors, are main risk factors for NAFLD in Asian people. As hepatic steatosis is a well-known feature for patients with HCV infection and may affect disease progression as well as the therapeutic response to anti-viral therapy in chronic hepatitis patients, several studies have examined the impact of hepatic steatosis on Asian CHB or CHC patients. (Table 1)

Lifestyle modification and maintaining weight loss, remain the first-line and mainstay of management recommended. New treatments in NAFLD/NASH patients from the Western reports have shown promising results, and ongoing studies validate their use in Asian countries will be available soon.

Conclusion

The use of new treatments on NAFLD/NASH needs be validated in Asian people, and collaboration in Asian countries to develop an effective and practical measurement for NAFLD/NASH is urgently required.