



A Worst Case Scenario is Happening for the Future of Liver Diseases in Developing Countries: Obesity and Diabetes Mellitus is Growing Fast as the Fighting against Viral Hepatitis is Going Slow

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Keywords

Epidemiology; Diabetes mellitus; Obesity; Non-alcoholic fatty liver disease; Hepatitis C virus; Hepatitis B virus

Abbreviations

NAFLD: Non-Alcoholic Fatty Liver Disease; HCV: Hepatitis C Virus; HBV: Hepatitis B Virus; MS: Metabolic Syndrome; DM: Diabetes Mellitus

Commentary

The burden of liver diseases is still growing all around the world [1]. The problem is the huge variation of the cause of liver diseases in each countries or regions. Thus, in order to resolve the problem, it is crucial to understand the local issues leading to liver diseases. For most of the developed countries, the picture is quiet clear; non-alcoholic fatty liver disease (NAFLD) and chronic hepatitis C virus (HCV) are the leading causes for cirrhosis and the prevalence of chronic viral hepatitis B (HBV) is as low as 0.1 to 0.3 [2,3].

In spite of the promising success stories with HBV vaccination program [4], in most of the developing countries, HBV is still in the picture with 4% to 10% of prevalence [5,6]. The available anti-HBV drugs are doing their job very well, but they are mostly suppressive, not curative.

Given the new anti-HCV medications, there is a growing hope to eradicate HCV disease worldwide [7]. However, besides the great discount rates for the drugs in undeveloped or developing countries, a huge group of patients could not reach those drugs because of its prices [8].

On the other side, obesity is on the rise all around the world among both children and adults [9]. It was recently determined that the rates of obesity increased up to 40%, nearby diabetes mellitus (DM) up to 90% increase [10,11]. As a component of metabolic syndrome (MS), obesity and insulin resistance were both attributed to many systemic problems including cardiovascular diseases and NAFLD [12-14]. Presence of DM has been adding an additional risk for cirrhosis, hepatocellular carcinoma and overall hospitalization among NAFLD patients [15-17].

In the literature, HCV was reported as a risk factor for DM and liver feature of MS, NAFLD [1]. Even though given DM alters the severity of underlying liver fibrosis in chronic HBV infected patients; it is still not clear whether HBV is a driven for DM. A cross sectional population based study revealed that DM prevalence in Turkey was 7.2% and 16.5% in 2002 and 2013, respectively [10,18]. Comparing this given population based data; the prevalence of 3.73% for DM among non-cirrhotic HBV patients supported the idea that HBV has no impact on DM [19]. This retrospective study covered the national claim data in the year of 2010 as the same year of population based study [18]. Not surprisingly, DM prevalence in non-cirrhotic HCV patients was higher compared to HBV patients (17% vs. 3.7%, respectively) [20]. Including only non-cirrhotic HBV patients, it was not surprised that HBV study revealed a prominently lower DM prevalence compared to population based study (3.73% vs. 16.5%, respectively) [18,19]. A significant increase in DM prevalence from non-cirrhotic to cirrhotic patients was seen among HCV infected patients. DM prevalence in non-cirrhotic HCV patients was 17%; however, it increased to 31.5% in cirrhotic HCV patients [20]. Unfortunately, the economic growth in developing countries has been bringing a new issue coming

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with obesity and DM over the continued and unsolved chronic viral hepatitis B and C problems. Obesity and DM alter the natural history of HCV related morbidity and mortality; and HCV disturbs insulin resistance through some mechanisms and adds a further risk for cirrhosis and hepatocellular carcinoma [18]. Even if HBV has not been putting any additional risk on DM as discussed above, HBV accompanied with DM has almost become an emerging problem in developing countries.

References

1. Bugianesi E, Salamone F, Negro F. The interaction of metabolic factors with HCV infection: does it matter? *J Hepatol.* 2012;56:S56-65.
2. Durand F, Francoz C. The future of liver transplantation for viral hepatitis. *Liver Int.* 2017;37:130-35.
3. Hofstraat SHI, Falla AM, Duffell EF, Hahné SJM, Amato-Gauci AJ, Veldhuijzen IK, et al. Current prevalence of chronic hepatitis B and C virus infection in the general population, blood donors and pregnant women in the EU/EEA: a systematic review. *Epidemiol Infect.* 2017;145(14):2873-85.
4. Chang MH, You SL, Chen CJ, Liu CJ, Lai MW, Wu TC, et al. Long-term effects of hepatitis B immunization of infants in preventing liver cancer. *Gastroenterology.* 2016;151(3):472-80.e1.
5. Tozun N, Ozdogan O, Cakaloglu Y, Idilman R, Karasu Z, Akarca U, et al. Seroprevalence of hepatitis B and C virus infections and risk factors in Turkey: a fieldwork TURHEP study. *ClinMicrobiol Infect.* 2015;21(11):1020-6.
6. Ashraf H, Alam NH, Rothermundt C, Brooks A, Bardhan P, Hossain L, et al. Prevalence and risk factors of hepatitis B and C virus infections in an impoverished urban community in Dhaka, Bangladesh. *BMC Infect Dis.* 2010;10:208.
7. Wedemeyer H, Duberg AS, Buti M, Rosenberg WM, Frankova S, Esmat G, et al. Strategies to manage hepatitis C virus (HCV) disease burden. *J Viral Hepat.* 2014;21:60-89.
8. Iyengar S, Tay-Teo K, Vogler S, Beyer P, Wiktor S, de Joncheere K, et al. Prices, costs, and affordability of new medicines for hepatitis C in 30 countries: An economic analysis. *PLoS Med.* 2016;31;13(5):e1002032.
9. Mancini MC, de Melo ME. The burden of obesity in the current world and the new treatments available: focus on liraglutide 3.0 mg. *Diabetol Metab Syndr.* 2017;9:44.
10. Satman I, Omer B, Tutuncu Y, Kalaca S, Gedik S, Dincag N, et al. Twelve-year trends in the prevalence and risk factors of diabetes and prediabetes in Turkish adults. *Eur J Epidemiol.* 2013;28(2):169-80.
11. Upadhyay RP, Misra P, Chellaiyan VG, Das TK, Adhikary M, Chinnakali P, et al. Burden of diabetes mellitus and prediabetes in tribal population of India: a systematic review. *Diabetes Res ClinPract.* 2013;102(1):1-7.
12. SaykiArslan M, Turhan S, Dincer I, Mizrak D, Corapcioglu D, Idilman R. A potential link between endothelial function, cardiovascular risk, and metabolic syndrome in patients with non-alcoholic fatty liver disease. *Diabetol Metab Syndr.* 2014;6:109.
13. Korkmaz H, Unler GK, Gokturk HS, Schmidt WE, Kebapcilar L. Non invasive estimation of disease activity and liver fibrosis in non alcoholic fatty liver disease using anthropometric and biochemical characteristics, including insulin, insulin resistance, and 13C-methionine breath test. *Eur J Gastroenterol Hepatol.* 2015;27(10):1137-43.
14. Altinbas A, Sowa JP, Hasenberg T, Canbay A. The diagnosis and treatment of non-alcoholic fatty liver disease. *Minerva Gastroenterol Dietol.* 2015;61(3):159-69.
15. Kosmidou M, Milionis H. Diabetes mellitus and non-alcoholic fatty liver disease: the thread of Ariadne. *Minerva Endocrinol.* 2017;42(2):109-21.
16. SeydaSeydel G, Kucukoglu O, Altinbasv A, Demir OO, Yilmaz S, Akkiz H, et al. Economic growth leads to increase of obesity and associated hepatocellular carcinoma in developing countries. *Ann Hepatol.* 2016;15(5):662-72.
17. Carruthers JE, Bottle A, Laverty AA, Khan SA, Millett C, Vamos EP. Nation-wide trends in non-alcoholic steatohepatitis (NASH) in patients with and without diabetes between 2004-05 and 2014-15 in England. *Diabetes Res Clin Pract.* 2017;132:102-7.
18. SatmanI, Yilmaz T, Sengül A, Salman S, Salman F, Uygur S, et al. Population-based study of diabetes and risk characteristics in Turkey: results of the turkish diabetes epidemiology study (TURDEP). *Diabetes Care.* 2002;25(9):1551-6.
19. Altinbas A, Baser E, Burkan A, Ertugay E, Kariburyo MF, Baser O. Retrospective analysis of total direct medical costs associated with hepatitis B patients with oral antiviral versus pegylated interferon therapy in Turkey. *J Viral Hepat.* 2014;21(11):794-801.
20. Baser O, Altinbas A, Baser E, Kariburyo F. Economic impact and complications of treated and untreated hepatitis C virus patients in Turkey. *Value Health Reg Issues.* 2015;7:42-8.