

Hepatology Highlights

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Prevalence and factors associated with the presence of abnormal function liver tests in patients with ulcerative colitis

Yamamoto-Furusho K, *et al.* Hepatobiliary diseases are well recognized in inflammatory bowel disease (IBD) frequently presenting as abnormal serum liver biochemistry.¹ The associated liver and biliary tract disease range from minor conditions, such as liver fatty changes, to severe diseases including primary sclerosing cholangitis and autoimmune hepatitis. The reported prevalence of IBD associated to hepatobiliary diseases has varied from 3% to greater than 50%.^{2,3}

In this issue, Yamamoto-Furusho, *et al.*, report their prospective single center study to investigate the prevalence of abnormal serum liver biochemical tests and risk factors associated with their development in Mexican patients with ulcerative colitis (UC). This is noteworthy as UC in Latin America may be genetically and phenotypically different to other populations. From January 1, 2007 to December 31, 2008 at the Instituto Nacional de Ciencias Médicas y Nutrición Hospital in Mexico, 200 patients (94 females, 106 males) with UC, who did not consume a significant amount of alcohol, were evaluated. A high prevalence of abnormal serum liver biochemical tests was found in 40%. The pattern of

abnormal serum tests was hepaticellular (70%), cholestatic (20%) and mixed (10%). The most common occurrence of the abnormal serum tests was a transient elevation in 63%, presumably not reflective of significant hepatobiliary disease. The hepatobiliary diseases resulting in the abnormal tests were: fatty liver disease (11.2%), primary sclerosing cholangitis (6.3%), drug-toxicity (6%) and other conditions (13.5%) including chronic hepatitis C, total parenteral nutrition associated disease, granulomatous and ischemic hepatitis. Factors found to be associated with the abnormal serum liver biochemistry included: intermittent activity of UC, surgical procedure including colectomy, active UC, abdominal sepsis and the presence of a positive ANA serology.

The present study confirms the relationship between UC and abnormal liver biochemistry. Non-alcoholic fatty liver disease turned out to be less common in this population than previously reported. Of interest, the majority of the patients in this study had an unknown cause for the abnormal serum liver biochemistry. Although this is a one center study, the results obtained may be limited to this center. However, this study does contribute to the understanding of UC patients in Mexico in relationship to abnormal liver biochemical abnormalities that appeared very commonly, and associated to hepatobiliary diseases.

Prevalence of non alcoholic fatty liver disease in premenopausal, postmenopausal and polycystic ovary syndrome women. The role of estrogens

Gutierrez-Grobe Y, *et al.* Non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) are becoming increasingly prevalent

world-wide. In North America, the prevalence overall is estimated to be 30% and amongst the obese population (i.e. BMI >30), it can be as high as 70%. Risk factors for fatty liver disease throughout the world include the adoption of a high-calorie diet that may be attributable to the wide-spread influence of an American-style diet. Epidemiologic studies suggest that Hispanics and diabetic patients are at

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greatest risk for both NAFLD and NASH.^{4,5} Insulin resistance has been implicated in the pathogenesis of both nonalcoholic fatty liver disease (NAFLD) and polycystic ovary syndrome (PCOS).⁶

The aim of the study of Gutierrez-Grobe, *et al.* was to investigate the prevalence of NAFLD in premenopausal, postmenopausal and polycystic ovary syndrome (PCOS) women in a cross-sectional study performed at the University Hospital in Mexico City between February 2009 and December 2009. Metabolic and biochemical variables were measured. Serum estradiol and cortisol concentrations were determined and compared between the groups. The study included 197 female subjects, of whom 93 (47.2%) had NAFLD and 104 (52.8%) did not have NAFLD. There were 90 premenopausal patients (46.2%), 57 postmenopausal patients (29.4%) and 50 PCOS patients

(25.4%). The prevalence of NAFLD in premenopausal, postmenopausal and PCOS patients was 32.2%, 57.9%, and 62%, respectively. The authors concluded that NAFLD is more prevalent in postmenopausal and women with PCOS than those premenopausal ones and that estrogen may have a protective effect of against NAFLD in women.

This study highlights the prevalence of NAFLD among postmenopausal women and generates a hypothesis that there may be a protective effect of estrogen. One limitation to the study is that the diagnosis of NAFLD was made based on ultrasound and liver biopsy was not performed, therefore, the prevalence of NAFLD may have been underestimated. It would be of interest to have the hypothesis that estrogen protects against NAFLD formally studied in the future.

Liver diseases in Mexico and their associated mortality trends from 2000 to 2007: A retrospective study of the nation and the federal states.

Méndez-Sánchez N., *et al.* Liver disease is a major health issue all over the world. According to the Office for National Statistics in the United Kingdom, liver disease is now the fifth most common cause of death. However, unlike other major causes of mortality, liver disease rates are increasing.⁷ Liver diseases may be secondary to several etiologies including alcoholic liver disease, viral hepatitis, non alcoholic fatty liver disease (NAFLD) and liver cancer. In Mexico liver disease is the second leading cause of death in people aged between 35 and 55.⁸ Alcohol-related liver diseases remain the most important causes of chronic liver disease in Mexico.⁹ Several studies have been performed to analyze the impact of liver diseases on the Mexican population, but not one has compared the geographic distribution of disease within the different states of Mexico.

The aim of this study was to analyze trends in mortality associated with liver diseases in Mexico from 2000 to 2007 at both the national and state levels. Open-access databases were used to obtain data on deaths registered by the Ministry of Health of Mexico. Mortality due to viral hepatitis, liver tu-

mors, and cirrhosis increased over the study period. Alcohol-related mortality decreased but was still the main cause of liver-related deaths. Hepatitis infection occurred predominantly in the northern states and liver tumors occurred predominantly in the central region. Alcohol-related deaths were elevated along the Pacific shoreline and deaths associated with cirrhosis occurred mainly in the central and southern states. This study concluded that liver-related mortality has increased significantly at the provincial and national levels and it is estimated that it will continue to increase.

The present study confirms the increase in mortality associated with chronic liver disease in Mexico, and at the same time provides an interesting look at prevalence of the different causes of liver disease across geographic regions of Mexico. Liver disease clearly remains a significant problem in that country. Although a decrease in alcohol related mortality was reported, alcohol remains the primary cause of liver disease in Mexico. This is a disturbing finding as alcoholic liver disease is completely preventable and therefore mortality from this form of liver disease is tragically unnecessary. This article highlights the need for effective public health programs in Mexico with regards to alcohol and the need for improved awareness in Mexican society about the morbidity and mortality associated with alcohol.

REFERENCES

1. Lepistö A, Kivistö S, Kivisaari L, Arola J, et al. Primary sclerosing cholangitis: outcome of patients undergoing restorative proctocolectomy for ulcerative colitis. *Int J Colorectal Dis* 2009; 24(10): 1169-74.
2. Broomé U, Löfberg R, Veress B, Eriksson LS. Primary sclerosing cholangitis and ulcerative colitis: evidence for increased neoplastic potential. *Hepatology* 1997; 25(1): 254.
3. Broomé U, Glaumann H, Hellers G, Nilsson B, et al. Liver disease in ulcerative colitis: an epidemiological and follow up study in the county of Stockholm. *Gut* 1994; 35: 84-9.
4. Jeanne C. The Epidemiology of Nonalcoholic Fatty Liver Disease in Adults. *J Clin Gastroenterol* 2006; 40: S5-S10.
5. Williams CD, Stengel J, Asike MI, Torres DM, et al. Prevalence of Nonalcoholic Fatty Liver Disease and Nonalcoholic Steatohepatitis among a Largely Middle-Aged Population Utilizing Ultrasound and Liver Biopsy. *Gastroenterol* 2010. doi:10.1053/j.gastro.2010.09.038.
6. Gambarin-Gelwan M, Kinkhabwala SV, Schiano TC, Bodian C, et al. Prevalence of nonalcoholic fatty liver disease in women with polycystic ovary syndrome. *Clin Gastroenterol Hepatol* 2007; 5: 496-501.
7. UK national statistics. Available at: <http://www.statistics.gov.uk/>
8. Méndez-Sánchez N, Villa AR, Chávez-Tapia NC, et al. Trends in liver disease prevalence in Mexico from 2005 to 2050 through mortality data. *Ann Hepatol* 2005; 4(1): 52-5.
9. Secretaría de Salud M. Base de datos de información sobre mortalidad. Available at: <http://www.salud.gob.mx/apps/htdocs/estadisticas/publicaciones/Mortalidad2000.zip>. Access: 3th January 2005.