

Worldwide mortality from cirrhosis*

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Abstract

Background/Aims: Cirrhosis mortality has registered large changes over the last few decades.

Aim: To report worldwide mortality due to cirrhosis over the period 1980-2002.

Methods: Age-standardized (world standard) cirrhosis mortality rates per 100,000 were computed for 41 countries worldwide over the period 1980-2002 using data from WHO mortality database.

Results: In the early 1980s, the highest rates were in Mexico, Chile (around 55/100,000 men and 14/100,000 women), France, Italy, Portugal, Austria, Hungary and Romania (around 30-35/100,000 men and 10-15/100,000 women). Mortality from cirrhosis has been steadily declining in most countries worldwide since the mid or late 1970s (annual percent change, APC, between -5% and -1.5% in the last decade only for both sexes). In southern Europe, rates in the early 2000s were less than halved compared to earlier decades. In contrast, rates have been rising in Eastern European countries to reach extremely high values in the mid 1990s, and declined only thereafter. In the UK rates were still steadily rising (APC around +7% in men and +3% in women from England and Wales, and +9% in men and +7% in women from Scotland). **Conclusions:** Mortality from cirrhosis shows favourable trends in most countries of

the world, following the reduction in alcohol consumption and hepatitis B and C virus infection. The steady upward trends observed over more recent calendar periods in the UK and central and eastern European countries are attributed to the persistent increase in the prevalence of alcohol consumption.

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Key words: Cirrhosis, mortality, alcoholic liver disease, hepatitis C.

Comment

We have read with great interest the article published by Bosetti *et al.*¹ In that study the authors analyzed systematically the mortality due to liver cirrhosis up to 2002 in various countries worldwide and quantified the changes in trends since 1970 using join point regression analysis from the World Health Organization (WHO) database. They established as base for comparison, the selected and grouped years of the period (1980-82, 1990-92, and 2000-02). Across that period three different versions (8th, 9th, and 10th) of the International Classification of Diseases (ICD) were adopted in the countries. The authors mention «...no appreciable change was introduced in the coding procedures of deaths from cirrhosis during this period...». However, from a methodological viewpoint it is necessary to report the equivalences of coding among versions of the ICD. For example, ICD-10th classifies under K70 (alcoholic fatty liver, alcoholic hepatitis, alcoholic fibrosis and sclerosis of liver, alcoholic cirrhosis of liver, alcoholic cirrhosis NOS, alcoholic hepatic failure, alcoholic liver diseases unspecified) and K74 (hepatic fibrosis, hepatic sclerosis, hepatic fibrosis with hepatic sclerosis, primary biliary cirrhosis, chronic nonsuppurative destructive cholangitis, secondary biliary cirrhosis, biliary cirrhosis unspecified, other and unspecified cirrhosis of liver: NOS, cryptogenic, macronodular, micronodular, mixed type, portal and postnecrotic). When comparing the ICD-9th it only includes liver cirrhosis in the code 571 (alcoholic fatty liver, acute alcoholic hepatitis, alcoholic cirrhosis of liver, alcoholic liver disease unspecified, chronic hepatitis, unalcoholic cirrhosis of liver, biliary cirrhosis, other chronic unalcoholic hepatic damage, and chronic hepatic damage unspecified), while the

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ICD-8th reserves with the same code 571 (alcoholic cirrhosis, alcoholic hepatitis, Laënnec's cirrhosis, and other unalcoholic: biliary, passive-congestive, splenomegalic, hepaticlienal, portal, postnecrotizing, fatty degeneration of liver, Banti's disease, hepatoleneal fibrosis, and chronic hepatitis). Thus, the changes in the classification of diseases are common artificial causes of modification in the trends of mortality. By the other hand, in the specific case for Mexico, the last available mortality data of the paper corresponded to 1995 (more than one decade delayed) and it could represent a serious disadvantage to compare the behavior of mortality by liver cirrhosis throughout the time. Moreover, it is important to emphasize that age-standardized mortality rates are artificial estimators valid to compare but they do not reflect the real (true) magnitude of the death risk. According to the National System of Health Statistics of Mexico liver disease-related mortality in 2005 was the third cause of general mortality in our country (only behind coronary heart disease and diabetes mellitus type 2). Around 27,566 patients died in that year due to liver cirrhosis and other chronic liver diseases, with a reported rate of 25.9/100,000 inhabitants.²

The authors comment that the main cause of liver cirrhosis in Mexico is alcoholic liver disease (ALD), but they also recognized the fact that the statistics regarding the prevalence of Hepatitis C Virus (HCV) were not entirely reliable. The etiology of liver cirrhosis was determined in a multicenter study conducted by a group from the Mexican Association of Hepatology. Data were gathered from eight hospitals in different areas of the country with a total of 1,486 subjects studied. The first cause of liver cirrhosis was ALD (39.5%); however, no statistically significant differences were found when comparing alcohol vs HCV infection (36.6%, $p = \text{NS}$) [2], therefore we consider both to be the main causes of liver cirrhosis in our country.³

Mendez-Sanchez *et al.* evaluated the trends in liver disease prevalence in Mexico derived on mortality data by means of mathematic models. As Bosetti *et al.* suggest in their paper, we demonstrated that ALD and HCV infection as etiologies of liver cirrhosis are on the rise and this is expected to be maintained as far as 2050 if health-care policies are not intensified.⁴

A third player is on the rise, as nonalcoholic fatty liver disease is increasingly recognized in Mexico and the world. We reported that «cryptogenic» cirrhosis is the third cause of liver cirrhosis in Mexico.³ Even more, we showed that the increase in overweight and obesity prevalence, observed in our country over the past decade, is significantly correlated with an increase in liver disease-related mortality.⁵

We consider Bosetti *et al.* work to be of great importance to the understanding of the current epidemiology of liver disease worldwide, although significant methodological and epidemiological data should be taken into account when deriving conclusions from WHO database.

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