Mortality trends for liver cancer in Mexico from 2000 to 2006

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Abstract

Hepatocellular carcinoma (HCC) is the most common primary liver cancer, with an estimated incidence of half a million new cases per year around the world. Furthermore, HCC is the third greatest cause of cancer-related death in the world, and most of these deaths are registered in developing countries. Recently it has been suggested that Hispanics in the United States have high rates of HCC, but no information regarding this is available in Mexico. The aim of this study was to investigate recent trends (2000–2006) in HCC mortality rates in Mexico. Methods. Data on national mortality (death certificates) reported for the years 2000–2006 by the Health Ministry of Mexico were analyzed (www.salud.gob.mx). HCC as a cause of death was analyzed. Mortality rates were calculated for all population ages. Causes of death related to HCC were selected in accordance with the International Classification of Diseases, 10th Revision, Liver Cancer (C22.0, C22.7, C22.9). Results. We found that age-adjusted mortality rates were remarkably higher in men than in women in the period 2000–2006. In addition, we found an increase in the general mortality rates of HCC from 4.1 per 100,000 in 2000 to 4.7 per 100,000 in 2006. Conclusions. The results of this study suggest an increase in the mortality rate for HCC in the period 2000–2006. HCC will become a significant cause of morbidity and mortality in the near future.

Key words: Hepatocellular carcinoma, Hepatitis C, Alcohol, NASH, Mexico.
change of 14%, corresponding to an increase in rate from 4.16 per 100,000 inhabitants in the year 2000 to a rate of 4.74 per 100,000 inhabitants in the year 2006 (Figure 1; Pearson’s correlation coefficient = 0.94, p = 0.001).

The increasing trend in mortality rates according to gender also shows a clear difference, with higher rates in males. However, in terms of percentage change, women had a 15.5% rise in mortality rate from the year 2000 (3.81 per 100,000 women) to the year 2006 (4.40 per 100,000 women), in comparison with the men whom had a change of 12.4% (4.5 per 100,000 men in 2000 vs 5.06 per 100,000 men in 2006; Figure 2).

Higher mortality rates were observed in the population 60 or more years of age. The 0–14 and 15–59 year age groups had rates lower than two per 100,000 inhabitants, while the greater than 60 years age group had rates around 45 per 100,000 inhabitants (Figure 3).

### Discussion

We found that in Mexico, mortality from HCC showed an increasing trend in the period 2000–2006. This increase in mortality rate is similar to that found in the United States (4.7 per 100,000 persons in 2001). Furthermore, El-Serag et al. analyzed the database of the National Cancer Institute of the United States to calculate race-specific mortality for HCC. They found a 31% increase in the incidence of HCC in Hispanic men and a 63% increase in Hispanic women in the period of 2000–2002 compared with that of 1992–1995. Hispanic women had the fastest increase in HCC incidence compared with other groups. Interestingly, rates for native-born Hispanic men were found to be twice as high as those for immigrant Hispanic men.

International trends in mortality have also been evaluated in 22 populations for the period 1979–1998. Among men, increases in mortality from liver cancer have been reported in the United States, Japan, Australia, Scotland, France, and Italy, whereas decreasing trends have been reported in the United Kingdom. Trends among women were similar.

Interestingly, a recent study that analyzed the trends in mortality from HCC in 23 European countries over the period 1980–2004 using data from the World Health Organization found that in males, overall mortality from HCC increased in Austria, Germany, Switzerland, and some other western European countries, while it significantly decreased over recent years in France and Italy, which had large upward trends until the mid-1990’s. Also in that study, the investigators found that in most countries, trends for those aged 45–59 years were consistent with overall trends, whereas they were more favorable for those aged 20–44 years of both sexes. In contrast, in our study, higher mortality rates according with age were observed in the population of aged 60 or more years. The 0–14 and 15–59 years age groups had rates lower than two per 100,000 inhabitants, while the group aged 60 or more years had rates around 45 per 100,000 inhabitants. These
differences in mortality trends in young and middle-aged populations observed between European countries and Mexico may be related to the time of diagnosis or HCC surveillance programs available in Europe.

In the United States, the three main risk factors associated with HCC are infection with hepatitis C virus (HCV), infection with hepatitis B virus (HBV), and alcoholic cirrhosis. However, in Mexico, the main risk factors are HCV and alcohol. Furthermore, cryptogenic cirrhosis has been estimated to account for 5 to 30% of patients with end-stage liver disease.

Finally, an association between diabetes and liver disease has been suggested. In fact, Hassan et al. reported a case-control study of 115 HCC patients and 230 non-liver-cancer patients in which the odds ratio for diabetes was 4.3 (95% CI: 1.9–9.9). If this information is confirmed in well-designed cohort studies, diabetes, which is highly prevalent in Mexico, may be shown to be another important risk factor for HCC in the Mexican population.

In conclusion, the results of this study suggest an increase in HCC mortality rates in the period 2000–2006. HCC will become a significant cause of morbidity and mortality in the near future. Efforts to collect representative etiologic data on new HCC cases are needed to enable better characterization of trends and to guide the planning and evaluation of prevention programs.

References


