Hepatocellular Carcinoma and Other Hepatic Diseases in Santa Catarina State

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Abstract

The hepatic diseases (HD) and hepatocellular carcinoma (HCC) that affected children and adults patients from Santa Catarina State, Southern region of Brazil were studied. For children, the incidence of cirrhosis and hepatitis was 46 and 40% of the cases, respectively, and that of HCC was 14%. Sixty four % of the cases of hepatitis were caused by virus infection and 22% were autoimmune. The virus A and B hepatitis was 7.1 and 21.4% of the total of virus hepatitis cases, respectively. The percentage of deaths by cirrhosis was 71.4 and that by HCC was 28.6%. Although the HCC incidence in Santa Catarina has been low in relation to other HD studied between 1980 and 1997, it is important to emphasize that the virus hepatitis had a high participation especially by B virus infection (HBV). In adults, the incidence of cirrhosis and hepatitis was higher (70.5 and 14.3% of the cases, respectively) than HCC (11.7%). The percentage of deaths by cirrhosis and HCC were 77.7 and 17.3%, respectively. Apart from other factors that could be leading to the HD reported in Santa, Catarina State, one should take into account other factors such as the diet and mycotoxin contamination. Aflatoxin B1 is a potent carcinogen and the diet in the south of the country includes food that has been reported being highly contaminated by that toxin. The food that are preferred and mostly eaten, either by children or adults, as snacks are: peanuts (pacocainquinha = ground peanut paste with sugar) and corn (high variety of corn snacks and polenta = cornflour porridge).

Key words: hepatocellular carcinoma, cirrhosis, hepatitis, SC, aflatoxin B1

Introduction

Cancer is the second cause of death in Brazil. Although liver cancer is the 8th most common cancer in the world, it represents ca. 4% of death in Brazil¹. However, there is a lack of a proper registry for cases of cancer in several regions of Brazil, inclusive for hepatocellular carcinoma (HCC) which is mainly due to sub-notification. A study carried out by the Brazilian Institute of Cancer between 1981 and 1985 showed the following data: from a total of 2067 HCC cases registered, 45, 110, and 166 cases were from Santa Catarina, Rio Grande do Sul and Parana State respectively, which comprises the South Region of the country. The State of Sao Paulo (Southeast region) itself had 608 registered cases.³ As far as Brazilian data reported internationally are concerned, only a few data are available, and they are from three Brazilian States only (Para, Goias, and Rio Grande do Sul) being 7/6, 42/

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34, and 117/83 cases of liver cancer for males/females, on a total of 2093/2794, 3095/3702, and 5436/5865 cases of cancer registered in their respective Capital cities: Belem, Goiania, and Porto Alegre. Therefore, a preliminary study was carried out in order to evaluate the incidence of hepatic diseases (HD), especially HCC in children and adults patients from SC State and their correlations to age, sex, region of the SC State and deaths by HD in the Southern region of Brazil from 1980 to 1998.

**Materials and Methods**

Materials: Medical registries of patients from the (A) Joana de Gusmao Pediatric Hospital and (B) Governador Celso Ramos Hospital (period: 1980 to 1998), located in Florianopolis city, capital of Santa Catarina (SC) State, Brazil. Both hospitals are reference in SC State for children and adults oncology treatment. Method: The medical registries of the hospitals A and B were surveyed for hepatic diseases (HCC, cirrhosis and hepatitis) followed by an specific questionnaire previously prepared with the following parameters: sex, age, region, where the patients live in the past 10 years and death by hepatic disease.
Results and Discussion

Children: The incidence of cirrhosis and hepatitis were higher (46 and 40% of the cases, respectively) than HCC (14%). The HD reached more patients at ages between zero and 5 years old (46%) (Figure 1A and 3A) and more females (54%) than males. On the other hand, the HCC was more detected in children from 2 to 11 years old and males. Most of patients came from SC State (94%), only two cases were from Parana State and one of unknown origin. The regions that had more patients with DH registered were the East and Valley (29%, each). For the Types of hepatitis, 64% of the cases were by virus infection, 22% were autoimmune, and 14% of them were not possible to identify (Figure 4). The highest number of cases of hepatic disease types per year in children were registered in 1995 (Figure 6), and the incidence of death per hepatic disease in children was cirrhosis with 71.4% (Figure 2A) and for HCC 28.6%. On the other hand, for adults: The incidence of cirrhosis was higher (70.5%) than hepatitis and HCC (11.7 and 14.3% of the cases, respectively). As far as age
and sex are concerned, the HD reached more patients at ages between 51 and 60 years old (30.5%) (Figures 1B and 3B) and more males (66%) than females. The region that had more patients with HD registered was the Valley (32%) and the percentage of deaths by cirrhosis and HCC was 77.7 and 17.3%, respectively (Figure 2B). The number of cases of hepatic diseases per years in adults was higher in 1982 (Figure 5). Considering that the present work was carried out with (a) children that are more susceptible to tumour inducer effect than adults and that (b) adults have their exposure to tumour inducers for a longer period of time than children, one should take into account other factors, apart from the high incidence of HBV, that may have induced the HCC formation in the southern region of Brazil, inclusive the diet and mycotoxin contamination. AFB1 is a potential hepatocarcinogen, and it should be emphasized that diet in the South of the country includes food products that could be
highly contaminated by AFB<sub>1</sub> such as peanuts (peanut snacks and pacoquinha = crushed peanut, mixed with sugar and cassava flour) as well as corn (corn snacks and polenta = cornflower porridge).

References