RESEARCH NOTE

Morbidity of Schistosomiasis in an Endemic Area of the Northeast of the State of Minas Gerais in Brazil: a Clinical and Sonographic Study

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One hundred and thirty eight individuals living in a rural community in the northeast of the State of Minas Gerais, in Brazil, an endemic area for schistosomiasis mansoni, were submitted to clinical, laboratory and ultrasonographic evaluation. The aim of this study was to define the morbidity of schistosomiasis in the studied area.

All patients had four stool samples examined by the Kato-Katz technique. The geometric mean of eggs per gram of feces for each age group is depicted in the Figure. Adults and children older than five years were submitted to abdominal ultrasonography using real-time equipment with Hitachi EUB-200 electronic linear 3.5 MHz transducers, and the inner diameter of the portal vessels and the thickness of vessels and the gall-bladder wall were measured according to the standard protocols of the Cairo working group (C Hatz et al. 1992 *Acta Trop 51*: 89-97) as adapted by others (RA Pinto-Silva et al. 1994 *Rev Inst Med Trop São Paulo 36*: 335-365, R Gerspacher-Lara et al. 1997, *Trans R Soc Trop Med Hyg 91*: 307-309). Splenomegaly was defined as splenic length > 120 mm for adults. For children aged 6 to 17 years, the upper normal splenic length (mm) was calculated from the formula 60 + (age x 10)/3 (RL Teele & JC Share, *Ultrasonography of Infants and Children*, WB Saunders, Philadelphia, 210 pp.). Informed consent was obtained and the protocol was reviewed and approved by the Ethical Committee of the Federal University of Minas Gerais.

The prevalence of schistosomiasis was 89.1%; the spleen was palpable in 12.2%, and 18.2% had periportal fibrosis diagnosed by ultrasonography. The prevalence of infection in schoolchildren (7-12 years of age) was 83.3%. Most infected individuals (59.4%) were eliminating less than 100 eggs/gram of feces. The frequency of periportal fibrosis on ultrasound classified as light, moderate and intense was 10.9%, 16.4% and 1.8%, respectively.

Abdominal sonography also identified periportal lymph nodes in 35.4% of the population and the majority of the individuals were in the age range of 5 to 15 years; as the lymph nodes observed looked like those described in patients with acute schistosomiasis (JR Lambertucci et al. 1994 *Trans R Soc Trop Med Hyg 88*: 76-77), this possibility shall be investigated in other field-based studies in the future. Liver fibrosis was diagnosed on ultrasound in 4 (25%) out of the 16 patients with palpable spleens. In 12 individuals splenomegaly should be explained by other diseases (no case of malaria or Chagas disease has been reported in the area in recent years but toxoplasmosis, mononucleosis, and visceral leishmaniasis among other diseases can not be ruled out) or else these patients may represent a group of hepatosplenics that have not developed periportal fibrosis yet. The follow up of the patients after treatment for schistosomiasis is important because regression of splenomegaly in this scenario would confirm the *S. mansoni* infection as the most probable explanation for their palpable spleens. If the latter assumption is correct the ultrasound would become an useful tool in the prompt identification of the individuals who respond rapidly to treatment for schistosomiasis with regression of the hepatosplenomegaly in endemic areas (JR Lambertucci et al. 1996 *Rev Soc Bras Med Trop 29*: 27-35).

Summing up, ultrasonography unveil new horizons in the study of the morbidity of schistosomiasis when combined with clinical, epidemiological and laboratory data, defining with more accuracy the profile of the disease in endemic areas for schistosomiasis.

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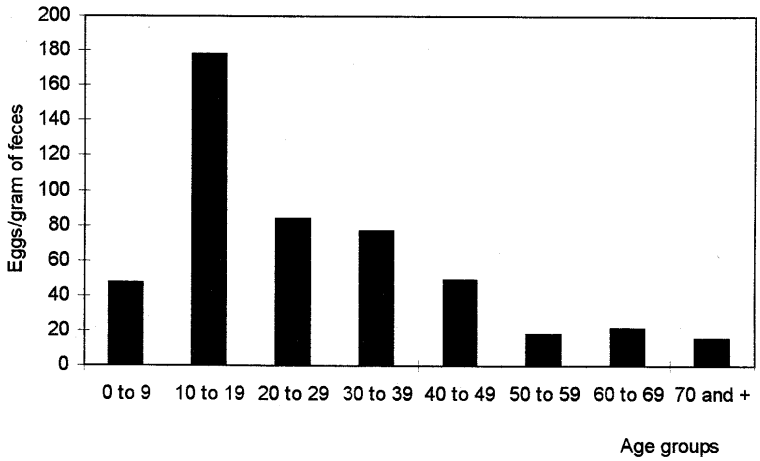

Geometric mean of the number of eggs per gram of feces in each age group.