THE EPIDEMIOLOGY OF SCHISTOSOMIASIS IN EGYPT: ISMAILIA GOVERNORATE


ABSTRACT

A multi-stage stratified sample of 12,515 individuals from 1,941 households in 42 villages in the Ismailia governorate of Egypt were surveyed for schistosomal infection. A subset of 2,390 subjects were surveyed for morbidity by physical and ultrasonographic examination. The prevalence of Schistosoma mansoni infection in rural Ismailia was 42.9% and the geometric mean egg count (GMEC) was 93.3 eggs/gram of stool, with considerable variability between communities. Prevalence and intensity peaked in the 20-30-year-old age group and was higher in males than in females. Prevalence and intensity of S. haematobium was very low: 1.8% and 3.5 ova/10 ml of urine GMEC, respectively. Canal water exposure risk factors for S. mansoni infection were males bathing (odds ratio (OR) 2.2), females washing clothes (OR 1.9), and children playing or swimming (OR 2.3). Presence of in-house piped water supply and latrine lowered infection rates (P 0.001 and P 0.002, respectively). Histories of S. mansoni infection (OR 1.6) or treatment (OR 1.5) and blood in feces (OR 3.5) were associated with infection. Hepatomegaly (16.0%) was more frequently detected than splenomegaly (3.6%) by physical examination, with both being more frequent in older age groups. Splenomegaly, but not hepatomegaly, was associated with presence of S. mansoni ova in stools (OR 1.4) and the community burden of infection (P 0.02). Ultrasonographically detected hepatomegaly, splenomegaly, and periportal fibrosis (PPF) were detected in 43.0%, 17.4%, and 39.7% of the subjects, respectively. The higher grades of PPF were rare. Ultrasonographically detected splenomegaly, not hepatomegaly, was associated with S. mansoni infection, community burden of infection, and PPF. Risk factors for PPF were the same as for S. mansoni infection. There was a marginal association of PPF with infection and none (P 0.33) with the intensity of infection in individuals or in the community. We conclude that in rural Ismailia, S. haematobium infection is rare but the prevalence and intensity of infection with S. mansoni is high. The risk of infection is associated with environmentally detected factors and behaviors. Hepatosplenic morbidity attributable to S. mansoni infection is low, presumably because of the favorable effect of wide application of praziquantel therapy.