INFLUENCE OF SALINITY ON SCHISTOSOMIASIS PREVALENCE IN THE LOWER VOLTA BASIN, GHANA

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2003

ABSTRACT

Schistosomiasis still remains one of the most important parasitic diseases in Ghana, especially in communities along the Volta River. The disease is still endemic and highly prevalent in the Volta Basin, despite several control programmes.

The study was conducted in the lower Volta Basin in communities from the estuary of the Volta River up to 21 km upstream with the aim to investigate the effect of salinity on the prevalence of schistosomiasis. Two hundred and eighteen (218) pupils in the primary schools from the lower Volta Basin were screened for schistosomiasis, using three diagnostic methods (microscopy of eggs, microhaematuria by reagent strips and questionnaire approach). The salinity and other physico-chemical parameters of the Volta River were measured in seven selected communities (Azizanya, Azizakpe, Ada Foah, Alorkpem, Big Ada, Pediatorkope and Tuanikope) in the study area

A relatively high prevalence of *S. mansoni* (54.7%) and *S. haematobium (*38.5%) were found. The apparent influence of salinity of the Volta River on schitosomiasis varied from one community to another.

Snail surveys showed the presence of *Bulinus globosus* and *Biomphalaria pfeifferi* in the seven communities in the study area. Of the schistosomiasis intermediate snail hosts 24 (23.5%) were *Bulinus globosus* and 78 (76.5%) were *Biomphalaria pfeifferi.* Of these, 35.7% of the *Bulinus globosus* were shedding cercariae compared to 49.5% of the *Biomphalaria pfeifferi* collected. The snails collected were associated with aquatic plants such as *Ceratophyllum demersum, Vallisneria aethiopicum, Echinochloa pyramidalis, Pistia stratiotes, Ipomea acquatica, Vossia cuspidata and Alternanthera sessillis.* No snails and aquatic plants were found in sections of the river (Azizanya and Azizakpe) with high salinity (1.0% - 6.4%). Likewise, relatively low schistosomiasis prevalence was found at Azizanya very close to the sea. These findings substantiate the effectiveness of dredging exercise embarked upon by VRA in the Volta Estuary which was aimed at reducing the prevalence of schistosomiasis through the accelerated intrusion of seawater into the Volta River in the area.

The patterns of infection as determined by microscopy and urine strips reagent in estimation of *S. haematobium* were similar, confirming the degree of sensitivity of these diagnostic methods. The questionnaire and microscopy diagnostic results were also similar for estimating *S. Haematobium.* These methods were however, not the same for estimating *S. mansoni* indicating high knowledge of symptoms of urinary schistosomiasis compared to intestinal schistsomiasis among pupils in the area.

The overall prevalence pattern revealed that, eradication of schistsomiasis in the Lower Volta Basin is becoming difficult because of large number of untreated people living in these communities, peopleôs ineptitude towards the disease and high level of migration of people looking for more productive fishing grounds . It is therefore important to initiate permanent control effort that requires the virtual eradication of infection from the project area, the nearby communities and the wide zone along the Volta River.

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