

Prevalence and Intensity of Soil Transmitted Helminth Infections among the School Children in the State of Uttar Pradesh, India

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Abstract : Infections caused by soil-transmitted helminths (STH) are the major problem in all the nations of the world. The major focus of STH research is to study the prevalence of three major helminths, such as *Ascaris*, *Trituris* and hookworm. Here we are reporting the prevalence and intensity of the STH in the school children of the state of Uttar Pradesh, India. The aim of the study is to assess the prevalence and risk factors of STH infection among the school children, aged between 5-10 years in 27 districts randomly selected districts with covering nine agro-climatic zones of Uttar Pradesh, India. For this cross-sectional survey, we have selected the populations of government primary school going children in Uttar Pradesh. The sampling was performed in the nine different agro-climatic zones. Every individual of the study populations filled their daily information in the questioner's form and then the sample was collected and processed by kato-katz methods by following the guidelines of WHO. In this method, the sampling was performed in total of 6421 populations. A total of 6,421 children from 130 schools were surveyed. Infection with any soil-transmitted helminths was detected among 4,578 children with an overall prevalence of 75.6% (95% CI: 65.3-83.6). Among the 6421 population, the prevalence of *Ascaris* is 69.6% (95% CL 57.97-79.11), hookworm is 22.7% (95%CL 19.3-26.3) and *Trichuris* sp is 4.6% (95% CL 0.8-21.6), so the predicted prevalence map indicates that the STH infection was hyperendemic in this state. The findings of our survey in 130 schools covering 9 agro-climatic with one or more soil transmitted helminths. Majority of STH infections were of light intensity. STH infection was hyper-endemic in entire state, except three zones in western Uttar Pradesh. High prevalence (> 75%) in all age groups also indicate little impact of existing deworming initiatives, including those among pre-school aged children. WHO recommends annual treatment in areas where STH prevalence is between 20% and 50%, and, a bi-annual treatment in areas with prevalence rates of over 50%. In view of high prevalence of STH infection in Uttar Pradesh, it is strongly recommended to initiate a deworming programme for school children in the state. Although our survey was among primary school children, high prevalence among children aged 4-6 years also indicates the need to strengthen the existing deworming programs for pre-school children. Extending the benefits of deworming to pre-school children through deworming in Anganwadi schools would further reduce to decrease the load of infection in community. As a long-term solution for control STH infection, it is also necessary to improve the sanitation levels in the area, as majority of the houses did not have latrines and most of the children were defecating in open fields, a factor that was found to be significantly associated with STH infection.

Keywords : prevalence, school going children, soil transmitted helminthes, Uttar Pradesh-India

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