

Helminth Parasites: A neglected threat to Mankind

Rekha Kumari* & Priyanka Thakur

Government Degree College Sarkaghat, Mandi (H.P.)-175024, India

E-mail: rekhud@yahoo.in

ABSTRACT: Helminths are parasitic worms that have plagued mankind since time immemorial. Helminthiasis is the most neglected disease of various parts of tropical India. The general assemblage of helminths is recognized as platyhelminthes and Aschelminths. More than 24% of people are globally infected with helminthiasis. Preschool children, miners, soil picker and childbearing women are more prone to the infection of parasitic helminths. In India more than 241 million children are infected by soil transmitted Helminths. A new strategy by WHO came into existence in 2001 which recommended the deworming programmes in endemic countries. WHO donated Albendazole and mebendazole to these endemic countries to eliminate the morbidity and complications due to helminths. Deworming is not a permanent solution for this. There is need for a fresh approach to target these parasites before they enter into a human body by removing the intermediate hosts. It has been observed that using certain predators can lower the chances of survival of these parasitic helminthes. Removal of these intermediate hosts from the life cycle of certain helminths can contribute much for controlling helminthiasis.

Keywords: Helminthiasis; parasitic helminthes and deworming.

INTRODUCTION: Helminths refer to parasitic worms which are of two types: flatworms and roundworms. Many of them live in the human body as well as in other Animals and cause various diseases. Helminths are of various sizes. They are as miniature as microscopic soil nematodes and large as gut parasites. Helminths have three main life cycle stages which includes eggs, larvae and adults. The small eggs transmitted by soil and also by certain vectors infect human beings. In 1947 a publication by Norman Stoll was a landmark in the history of Helminthiasis. His publication "This wormy world" provided the estimation of people infected globally by helminths (Stoll, 1999). Today more than a billion people are infected with helminths in developing regions of Sub-Saharan Africa, America and Asia. The abnormalities produced by them are commonly called helminthiasis which includes ascariasis, trichuriasis, taeniasis, fascioliasis, schistosomiasis and hook worms (Bethony *et al.*, 2006). The prevalence is highest in tropical and subtropical countries where sanitation is poor. Generally infections are asymptomatic when there are only a few worms in the body. But acute infections can lead to other severe problems like bronchitis, intestinal discomfort, impaired nutritional status and obstructions.

DISCUSSION:

Epidemiology of Helminthiasis: Helminthiasis spreads in poorer regions of the world. Soil transmitted helminthes are the major cause of infections in children of school going age group. It is recorded that over 1.4 billion people are infected with these helminths. A study conducted by Pullan *et al.* the high-

est number of infections observed in Asia were in India and china, leading towards highest infections of intestinal worms (Pullan and Brooker, 2012). The countries of Southeast Asia have a tropical and moist climate which is ideal for the development and survival of eggs. Factors like poor hygiene, sanitation infrastructure and other socioeconomic attributes are other reasons for the spread of helminthes (Dunn, *et al.*, 2016).

WHO strategies to control Helminthiasis: The goal of World Health Organization for helminth control is to reduce morbidity from various school aged children. A target was set by 2012 London Declaration to prevent 75% of school aged children before 2020 by using preventive chemotherapy. To accomplish the target various Asian and other endemic countries conducted a campaign on Mass Drug Administration. WHO recommends deworming programmes in endemic areas by using albendazole (400mg) and mebendazole (500mg) which are effective and inexpensive. WHO has donated these two medicines to the health ministries of several endemic countries. Along with deworming, an integrated approach to control helminthes is vaccine linked chemotherapy which is a useful tool in controlling helminthiasis (WHO, 2012).

CONCLUSIONS: There are many recent researches which evaluate and introduce new approaches to control helminth infection by using molecular and genetic tools like PCR, ELISA. The recent advances in molecular and medical helminthology could be a new generation approach to prepare various anthelmintics. A study has been done on schistosome vaccine based on genomics (Berqqist *et al.*). People should be

made aware about the effects of helminths on the health and wellbeing of young school-going children and infants. This will lead to more children from the high risk group getting vaccinated and dewormed at regular intervals. The governments in high risk developing countries need to allocate sufficient funds for regular deworming and awareness campaigns. This will provide enthusiasm in younger generations and probably will cause awareness for helminths and its effects. The Ministries of health in endemic countries and also the governments of the developed world have to put funds for research in helminthology. If more research is done on helminths and its propagation, perhaps we can find ways to neutralize them at the molecular level, which would render frequent deworming unnecessary.

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