Dosing schistosomiasis therapy for children not yet in school

Dr Solomon Mequanente Abay aims to contribute to optimising praziquantel therapy for Schistosoma mansoni infection in preschool-aged children.

Dr Solomon Mequanente Abay
Ethiopia

The challenge

Schistosomiasis is a worldwide public health problem, particularly in sub-Saharan Africa with approximately 90% of the infections. Schistosomiasis treatment and control relies largely upon therapy with praziquantel and is directed primarily at school-aged children (SAC) living in schistosomiasis-endemic areas.

In recent years, the occurrence of schistosomiasis within African preschool-aged children (PSAC) has been much better documented. It revealed an important burden of disease previously overlooked. However, school-aged children remain the principal target group for prevention with praziquantel, partly because of limited information on efficacy and safety in preschool-aged children and partly because they are wrongly thought to be at low risk of schistosomiasis.

A recent study revealed that praziquantel has a flat dose (20-60 mg/kg)-response and overall a lower efficacy in PSAC as compared with in SAC. The off-label use of praziquantel at a standard dose of 40 mg/kg to treat PSAC is an extrapolation of SAC and adult praziquantel dosages. However, these may not provide a good estimate in view of the maturational differences in absorption, metabolism and elimination.

There is a clear need to have evidence-based dosing recommendations of praziquantel for PSAC, based on pharmacokinetics, pharmacogenetics and intensity of *S. mansoni* infections.

The project

Dr Abay and his team proposed the PrazOPT study which aims to optimise praziquantel therapy in preschool-aged children infected with *S. mansoni*. The study has several objectives. The main objective is to conduct an observational prospective study to assess cure rate of PSAC receiving schistosomiasis therapy based on 40 mg/kg single dose praziquantel, assess the pharmacokinetics of praziquantel, and the pharmacogenetic and other biological factors affecting treatment outcome.

Regarding research capacity development, the second objective of the fellow is to support and advise a PhD student on the research for a clinical pharmacology thesis. The third objective is to train on GCP, data management, clinical study management, and pharmacokinetic modelling.

Project at a glance

Project: EDCTP Career Development Fellowship

Project lead: Dr Solomon Mequanente Abay, Addis Ababa University, Ethiopia

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EDCTP funding: €150,000

Fellow profile: *https://edctpalumninetwork.org/fe/profiles/view/cc7d40c6-c5a0-4797-90a3-316c1cbc81d5*

Impact

The research findings are expected to suggest optimised praziquantel therapy for preschool-aged children which may have a major health impact.