Higher blood concentrations of the main metabolite of praziquantel, R-*trans*-4-OH-PZQ, is associated with higher *Schistosoma mansoni* egg reduction and lower reinfection rates

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Schistosomiasis is a severe disease caused by blood flukes acquired from contaminated water sources. Guidelines set out by the World Health Organization recommend mass drug administration (MDA) with praziquantel as a measure to reduce prevalence and control morbidity. Despite this practice, hyper-endemic areas continue to endure in various regions of Uganda and cure rates and reduction rates post-treatment are highly variable. Poor cure rates may be due to either parasite factors such as drug resistance or host factors such as low drug absorption. Cure rates vary between individuals, but despite over a decade of MDA, drug resistance has not spread. Drug absorption levels were assessed in a pharmacokinetic study, as an alternative cause for variable drug efficacy in a hyper-endemic area. Finger prick dried blood spots (DBS) were collected from 197 school-aged children pre-treatment with 40mg/kg praziquantel and at 30 minutes, 1, 2, 3, 5, 7, 10, 17 and 24 hours post-treatment. A population level approach was used where each child provided a maximum of four post-treatment DBS samples each at different time points. Drug absorption and metabolite levels were measured using an offline extraction method. The influence of drug and metabolite levels on parasite clearance and reinfection rates were assessed using a generalised linear mixed model. There was a positive association between the main metabolite R-trans-4-OH-PZQ and higher parasite clearance and lower reinfection rates measured by Kato-Katz. Host biometric parameters were also considered in this study identifying increasing age as a predictor of higher clearance and lower reinfection rates.