

Publication

Antiparasitic drugs for paediatrics : systematic review, formulations, pharmacokinetics, safety, efficacy and implications for control

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SUMMARY Drug development for paediatric applications entails a number of challenges, such as the wide age spectrum covered - from birth to adolescence - and developmental changes in physiology during biological maturation that influence the efficacy and toxicity of drugs. Safe and efficacious antiparasitic drugs for children are of pivotal importance given the large proportion of burden attributable to parasitic diseases in this age group, and growing efforts to administer, as widely as possible, antiparasitic drugs to at-risk populations, such as infants and school-aged children, often without prior diagnosis. The purpose of this review is to investigate whether antiparasitic drugs have been adequately studied for use in paediatrics. We approached this issue through a systematic review using PubMed and the Cochrane Central Register of Trials covering a period of 10 years and 8 months until the end of August 2010 to identify trials that investigated efficacy, safety and pharmacokinetic (PK) parameters of antiparasitic drugs for paediatrics. Overall, 269 clinical drug trials and 17 PK studies met our inclusion criteria. Antimalarial drugs were the most commonly studied medicines (82.6%). Most trials were carried out in Africa and children aged 2-11 years were the age group most often investigated. Additionally, we critically examined available drug formulations for anthelmintics and identified a number of shortcomings that are discussed. Finally, we shed new light on current proposals to expand 'preventive chemotherapy' to preschool-aged children and emphasise that new research, including risk-benefit analyses, are needed before such a strategy can be adopted more widely

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