Ivermectin use in children below 15 kg : potential benefits for onchocerciasis and scabies elimination programmes

DR ROBERT COLEBUNDERS (Orcid ID : 0000-0002-1919-1340)

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Corresponding Author Email ID: robert.colebunders@uantwerpen.be

Ivermectin use in children below 15 kg: potential benefits for onchocerciasis and scabies elimination programs

R. Colebunders, S.T. Wafula, A. Hotterbeekx, J. N. Siewe-Fodjo

Global Health Institute, University of Antwerp, Antwerp, Belgium

We read with interest the paper by M Levy et al about the treatment of scabies with ivermectin in infants and children under 15kg of body weight[1]. The authors describe the results of a multicentre observational study conducted in France between 2012-15, among 170 children with body weight 4 to 14.5kg. Children were treated with a mean dose of ivermectin of 223µg/kg, and 89% of them had received two doses. Adverse events were observed in only seven participants (4%), none of which were severe. Therefore, they concluded that a therapeutic trial in infants and young children needs to be performed.

We would like to stress the importance to develop a roadmap to allow onchocerciasis elimination programs to include children < 15kg in their community directed treatment with ivermectin program. Currently, in the recommendations of onchocerciasis and lymphatic filariasis elimination programs, ivermectin (even at 150µg/kg) is contra-indicated in children <15kg. It is time that this recommendation is revisited. Indeed, we recently documented in onchocerciasis- endemic areas that some children can already develop onchocerciasis-associated epilepsy including nodding syndrome at the age of 3 years, when most of them still weigh less than 15kg[2]. Moreover, a cohort study in an onchocerciasis-endemic area in Cameroon showed that the risk to develop epilepsy later in life depends on the *Onchocerca volvulus* microfilarial density during childhood[3]. Recent data about the prevalence of *O. volvulus* infection

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in children below the age of 5 are not available, but a study in Burundi in 1997 among 4 and 5 year-old children, documented a prevalence of *O. volvulus* infection of 60% and a mean microfilarial density of 3.0 mf/per skin snip [4]. A clinical trial documenting the safety of ivermectin treatment in children with a body weight <15kg would allow Neglected Tropical Diseases elimination programs to lower the required minimal weight for mass ivermectin treatment. Given the possibility of high prevalence of O. volvulus infection among children living in onchocerciasis endemic regions, a rigorous monitoring strategy for adverse effects of ivermectin would be required during such trials.

Ivermectin mass drug administration has also been shown to reduce the prevalence of scabies in high prevalence areas[5]. Therefore, lowering the body weight threshold for ivermectin treatment during mass drug administration campaigns is expected to decrease the risk of developing onchocerciasis-associated epilepsy and reduce the transmission of onchocerciasis and scabies.

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