

New tool promises more accurate antimalarial drug dosing

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Scientists at LSTM have developed a tool to support the development of appropriate age-based dosing regimens for malaria drugs. Weight-based dosing is challenging in many malaria endemic countries because access to formal health services is limited, functioning scales may be scarce and many treatments are given at home using antimalarials bought from shops and street vendors. In these settings, drug doses are calculated using a patient's age to estimate their body weight.

There are no standardised procedures to devise age-based regimens as part of the normal regulatory drug developmental process, yet malaria control programs need dose recommendations that are based on both weight and age. The lack of clear guidance on age-based dosing has resulted in a considerable variation in recommendations, potentially resulting in poor, but widely-used regimens.

The method developed by LSTM's Dr Anja Terlouw and colleagues in collaboration with the World Health Organisation TDR programme, the Drugs for Neglected Diseases Initiative and the Netherlands Organisation for Applied Scientific Research helps to determine appropriate age-based dose regimens for both children and adolescents that would result in the smallest number of patients receiving doses above or below the effective dose range.

"A weight-for-age reference data set was compiled and modelled specifically for this purpose using nutritional data that was shared with us by institutes and scientists from over 35 malaria endemic countries.

This allowed us to develop a modelled reference distribution that reflects the variation in weight by age of populations in malaria endemic regions of Africa, Asia-Pacific and [Latin America](#) and can therefore provide the optimal translation of weight-based to age-based dosing regimens," explained Dr Anja Terlouw.

It has become increasingly clear that there are similar needs for age-based dosing regimens with other drugs. To address this, the team from LSTM has started work with DNDi and others to explore practical opportunities for work on drugs for other neglected diseases, and to improve the availability of evidence-based, safe and effective age-based dosing regimens for populations with limited access to health care.

Source: Liverpool School of Tropical Medicine

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