

Children with MDR-TB can be treated successfully

Children with multidrug-resistant tuberculosis (MDR-TB) can be successfully treated, according to an international collaboration, which conducted a systematic review and patient data meta-analysis on the clinical characteristics and treatment outcomes of 975 children from 18 countries. The results show that 78% (764 of 975) of these children had successful treatment outcomes when treated with second-line MDR-TB drugs.



Professor Anneke Hesselning, Desmond Tutu TB Centre, Faculty of Medicine and Health Sciences, Stellenbosch University. Photo: Stellenbosch University

“An estimated 32,000 children develop multidrug-resistant tuberculosis (resistant to the two main TB drugs, namely isoniazid and rifampicin), each year. Treatment for MDR-TB is of a longer duration and requires drugs that are more toxic. These regimens are frequently hard to tolerate, particularly in children, due to the length of treatment, drug toxicity and the lack of child-friendly formulations,” says one of the authors, Professor Anneke Hesselning from the Desmond Tutu TB Centre, Faculty of Medicine and Health Sciences, Stellenbosch University.

“To date, little has been known about the optimal treatment for these children. This review therefore gives vitally important information as to potential outcomes and some very good news for the TB field.”

Need for HIV treatment

The review also showed the urgent need for HIV treatment in children with HIV and TB co-infection. TB treatment was less successful in children who were HIV positive but not receiving antiretroviral therapy (ART).

"Treatment was successful in only 56% of children with bacteriologically confirmed TB who were infected with HIV who did not receive any antiretroviral treatment during MDR-TB therapy, compared to 82% in children infected with HIV who received ART during MDR-TB therapy.

"This highlights the urgent need for ART in these children, which should be a priority in our setting, where rates of HIV/TB coinfection are so high," she says.

Malnutrition was shown as another factor that affected treatment outcome and highlights the need for aggressive solutions.

Second-line injectable agents and high-dose isoniazid were associated with treatment success. However, a high proportion of children with non-severe disease who received no second-line injectable agents still did well.

This means children with non-severe disease may be able to be spared from these more toxic medications.

The review was published in [PLOS Medicine](#) show that tuberculosis treatment is successful in. The study was used to inform the World Health Organisation (WHO) [guidelines on treatment of MDR-TB in children](#).

"Further work is still needed on individual drug effects on treatment outcome. Although these results were used to update the WHO guidelines, further rigorously collected evidence is needed to help guide the management of MDR-TB treatment in children globally. This work gives us more understanding of the potential success of treatment, the potential for certain children to receive less-intensive, less-toxic regimens, and an understanding of risk factors for poor outcomes across settings, which is important for designing future treatment regimens," said Dr Tamara Kredo, co-author and senior specialist at Cochrane South Africa, an intramural research unit of the South African Medical Research Council.

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