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Announcement

Update on multidrug-resistant tuberculosis in children

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Two million children were infected with multidrug-resistant (MDR) *Mycobacterium tuberculosis* strains, and 25,000 children developed MDR tuberculosis (MDR-TB) in 2014 according to a recent estimate. MDR-TB (i.e., resistance against at least isoniazid and rifampicin) is a microbiological diagnosis, but TB is only bacteriologically confirmed in 30–40% of children with TB from whom specimens are obtained. Children, therefore, should also be presumptively diagnosed with MDR-TB if their source cases have MDR-TB. New genotypic diagnostic tests are helpful for rapid identification of MDR-TB, and the World Health Organization (WHO) has also recently approved second-line drug susceptibility testing by line-probe assay to assist in rapid diagnosis of extensively drug-resistant TB.

Treatment outcomes in children with MDR-TB are better (80–90% treatment success) than those of adults (50–60% treatment success). However, current treatment regimens still include use of a daily second-line injectable drug for 4–8 months. The WHO now also recommends a 9- to 12-month shortened regimen for adults and children with rifampicin monoresistant TB and those with strictly MDR-TB (no other resistance). This shorter regimen includes newer generation fluoroquinolones and clofazimine. Repurposed and new anti-TB drugs and regimens are currently being evaluated in adults with MDR-TB. Once found to be efficacious in adults, efficacy studies do not have to be repeated in children; however, dose-determination and safety studies are still essential in children, not only for the new drugs, but also for existing second-line drugs. The aim is to develop a shorter, injection-free regimen for children with MDR-TB. Although children experience fewer adverse effects from second-line anti-TB drugs than those experienced by adults, adverse effects remain a challenge. These need to be addressed for improved safety and better adherence.

Prevention of MDR-TB is better than cure. Although many experts agree that treatment of MDR infection in high-risk contacts (children <5 years and HIV-infected people) is needed, current guidelines vary widely in their recommendations, from no treatment to three-drug preventive therapy. Three prospective randomized control studies are ongoing or planned to identify a single-drug treatment of MDR-TB infection.

Conflict of interest

Our institution (Stellenbosch University) receives Grants for second-line antituberculosis drug pharmacokinetic studies from the NIH and for delamanid (new anti-TB drug) from Otsuka pharmaceuticals.

The author does not receive direct benefit.

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