

## More research needed on the best treatment options for multidrug-resistant TB

August 28 2012

The use of newer drugs, a greater number of effective drugs, and a longer treatment regimen may be associated with improved survival of patients with multidrug resistant tuberculosis (MDR-TR), according to a large study by a team of international researchers published in this week's *PLOS Medicine*.

Global efforts to control tuberculosis are being challenged by the emergence of strains that are resistant to several antibiotics including isoniazid and rifampicin, the two most powerful, first-line (standard) anti-tuberculosis drugs—so-called multidrug resistant tuberculosis (MDR-TB). The treatment of MDR-TB is lengthy, toxic, expensive, and has mostly resulted in poor outcomes for patients. Importantly, the optimal treatment regimens for MDR-TB have not been determined and, to date, there have been no randomized controlled trials of treatments for MDR-TB.

In this study, a large group of international researchers (the Collaborative Group for Meta-Analysis of Individual <u>Patient Data</u> in MDR-TB) combined data on outcomes of 9153 patients from 32 centers to find out more about the best way of treating MDR-TB. The researchers found that the use of certain drugs, the use of four or more effective drugs, and the duration of treatment were associated with successful <u>patient</u> <u>outcomes</u>.

The authors conclude: "This individual patient data meta-analysis of 9,153 patients suggests that <u>treatment</u> of MDR-TB should include a later



generation quinolone, and ethionamide or prothionamide. In patients who have not received second-line drugs before, the optimal number of likely effective drugs appears to be at least four in the initial intensive phase, and at least three in the continuation phase. The duration of therapy associated with highest odds of success was 7-8.5 months for the initial intensive phase, and 25-27 months for total duration."

However, these findings should be interpreted with caution because of the limitations in the methods and type of data used in the study. The authors say: "In view of the serious limitations of these observational data, these findings should be considered to have highlighted several important questions for future clinical trials.

These questions include the role and choice of injectables (medications that have to be given by injection), the optimal duration of an injectable and total therapy, and the potential value of later generation quinolones as well as certain group 4 and group 5 drugs."

**More information:** Ahuja SD, Ashkin D, Avendano M, Banerjee R, Bauer M, et al. (2012) Multidrug Resistant Pulmonary Tuberculosis Treatment Regimens and Patient Outcomes: An Individual Patient Data Meta-analysis of 9,153 Patients. *PLoS Med* 9(8): e1001300. doi:10.1371/journal.pmed.1001300

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