Locally sourced drugs can be effective for treating multidrug-resistant TB

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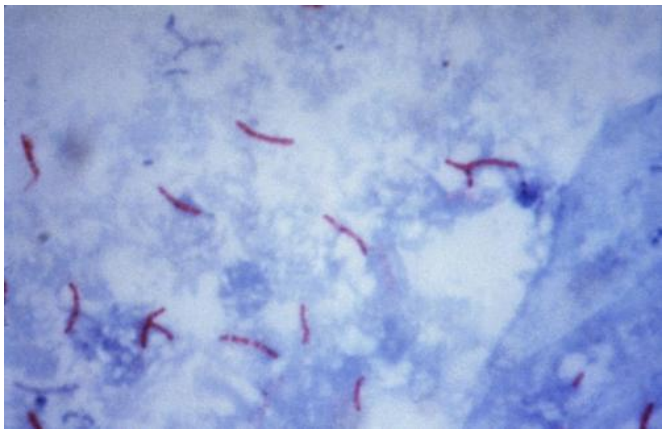

This photomicrograph reveals Mycobacterium tuberculosis bacteria using acid-fast Ziehl-Neelsen stain; Magnified 1000 X. The acid-fast stains depend on the ability of mycobacteria to retain dye when treated with mineral acid or an acid-alcohol solution such as the Ziehl-Neelsen, or the Kinyoun stains that are carbolfuchsin methods specific for M. tuberculosis. Credit: public domain

Locally-sourced antibiotics can be as effective as 'internationally quality-assured' (IQA) antibiotics for treating multidrug-resistant tuberculosis (MDR-TB) in Pakistan, and may help avoid delays in starting treatment while programmes wait for drugs to arrive from overseas, according to new research published in *PLOS ONE*.

The study is the first to compare outcomes of MDR-TB patients treated using IQA drugs with those treated using locally procured drugs in the same hospitals over the same period. It was a collaboration between researchers from the London School of Hygiene & Tropical Medicine, the Pakistan National TB Control Programme, and the Research Alliance for Advocacy and Development.

MDR-TB affects approximately 500,000 people globally per year and is resistant to at least the two most effective drugs usually used to treat TB. The main challenges in treating and preventing MDR-TB are costs of second-line antibiotics and concerns about drug quality. To enable TB control programmes to purchase internationally quality assured drugs for MDR-TB at a subsidised price, the World Health Organization established the Global Drug Facility in 2001. By 2013, 117,485 MDR-TB patient treatments had been purchased. However, the procurement and distribution through this international process takes longer and may increase overall costs compared to locally available drugs.

In the new study, researchers analysed clinical progress of 231 MDR-TB patients (90 treated with IQA drugs and 141 treated with locally procured drugs) at six months into treatment in three large MDR-TB hospitals across Pakistan. They found no overall difference between the two treatment groups. Previous studies have indicated that progress at six months is a good predictor of final treatment outcome.

Dr Mishal Khan, study author from the London School of Hygiene & Tropical Medicine, said: "Our findings suggest that potential treatment delays and additional costs associated with sourcing IQA antibiotics for MDR-TB, in preference to locally-sourced antibiotics, may not be justified in settings where good quality drugs can be procured locally.

"While there are legitimate concerns about poor regulation and drug quality in several low-resource countries, we hope this study contributes to the debate about advantages and disadvantages of local or regional drug procurement and quality testing. This may be a more sustainable strategy that encourages growth of the local pharmaceutical industry and exerts pressure on manufacturers in low-resource settings to abide by quality standards".

Study lead author, Dr Ejaz Qadeer, head of the Pakistan National TB Control Programme, said: "These results provide good evidence for TB policy-makers in Pakistan and other resource-constraint settings.

"The availability of second-line drugs is a major barrier in the provision of quality treatment to all MDR-TB cases. We believe a stringent drug control authority and ensuring quality standards at country level could be a feasible solution in low income settings like Pakistan. The study provides evidence to guide the National Health Authorities and global partners to consider further research in different settings, which may lead to appropriate policy changes for procurement of second line drugs."

The authors note that this was a non-randomised study and that confounding factors may have been different across cohorts. They also note that the locally-procured drugs in the study went through a quality assurance process by the hospitals, and therefore may not be representative of all antibiotics available on the market in Pakistan or in other countries.

More information: Qadeer E, Fatima R, Fielding K, Qazi F, Moore D, Khan M. Good quality locally procured drugs can be as effective as internationally quality assured drugs in treating multi-drug resistant tuberculosis. *PLOS ONE*. DOI: 10.1371/journal.pone.0126099

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