

New TB drugs at risk of developing resistance: experts

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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

New drugs for hard-to-treat tuberculosis strains may be fast rendered ineffective themselves if incorrectly used, a report warned Thursday, on the eve of World TB Day.

Antibiotics such as bedaquiline, delamanid and linezolid have recently been added to the tuberculosis drug arsenal, which is dwindling as TB bacteria develop resistance to an ever-broader array of treatments.

Much better control must be exercised over how these new drugs are prescribed and used, or "their effectiveness could be rapidly lost," according to a report published in *The Lancet Respiratory Medicine*.

Resistance to antibiotics can develop when a prescribed medicine fails to kill its bacterial target—either because it was the wrong drug, the wrong dose or not taken as prescribed.

But resistant strains can also be passed directly from one person to another. They are much more expensive, and take longer, to treat.

There was a decades-long lull in TB drug development after the last major antibiotic, rifampicin, was licenced in the 1970s.

But new drugs have recently started entering the field to treat patients who do not respond to the existing array.

Preliminary studies with linezolid, bedaquiline, and delamanid showed that they "substantially improve treatment outcomes, offering hope to patients who would previously have been considered untreatable," the report said.

'Highly drug-resistant'

"However, without sustained investment in the promotion of access to new treatments, including shorter regimens with fewer adverse effects, effective drugs will become scarce again as resistance develops to the newest treatment options," it warned.

Tuberculosis kills more people each year than any other infectious disease.

In 2015, it claimed the lives of an estimated 1.8 million people around the world—60 percent of whom lived in India, Indonesia, China, Nigeria, Pakistan and South Africa.

About one in five TB cases today are resistant to at least one antibiotic, and about five percent are so-called multidrug resistant (MDR-TB) strains.

In 2015, there were some 480,000 MDR cases, about half of them in India, China and Russia.

Migration and travel, said the report, "mean that highly drug-resistant TB strains have emerged in almost every part of the world."

It is a fast-growing problem in eastern Europe and central Asia—fuelled by the migration of labourers undiagnosed and untreated for TB, Michel Kazatchkine, the UN's special envoy for AIDS in that region, told AFP.

Hundreds of thousands of migrant workers move from central Asian countries to Russia and Kazakhstan every year.

To halt disease spread, countries must stop deporting migrants who are diagnosed with MDR-TB or HIV, said Kazatchkine.

"Currently, in too many instances in the region a diagnosis of TB, MDR-TB or HIV means deportation, a practice that is widely known to be ineffective to public health, violate human rights and may lead to drug resistant forms of infection."

Furthermore, migrants had to be given to a full treatment course in the

host country, Kazatchkine said.

"If we do not deal with multidrug resistant TB in eastern Europe and Central Asia, it may turn into a serious crisis."

For David Moore of the London School of Hygiene & Tropical Medicine, the time has come to test every diagnosed TB patient for drug resistance, so that they can be treated appropriately and the spread can stop.

"Complacency about detecting multidrug resistant TB (MDR-TB) has for too long been driven by constrained resources—the notion that we can't afford to test everybody with TB for drug resistance," he said.

"In fact, the stark truth is that we can't afford not to."

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