

# MDR-TB: An emerging burden for Bangladesh

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When a TB bacillus is resistant to isoniazid and rifampicin, then it causes Multi Drug Resistant-Tuberculosis (MDR-TB).<sup>1</sup> The resistance may be or may not be to other first-line drugs.<sup>2</sup> This is a serious and emerging public health problem to the world. In 2015, there were an estimated 480,000 new cases of MDR-TB and an additional 100,000 people with rifampicin-resistant TB (RR-TB) who were also newly eligible for MDR-TB treatment.<sup>1</sup> The World Health Organization (WHO) estimated that 3.9% of new and 21% of previously treated TB cases had rifampicin- or multi-drug-resistant tuberculosis (MDR/RR-TB) in 2015.<sup>1</sup> It was also reported that 210,000 deaths occurred due to MDR-TB globally in 2013.<sup>3</sup> MDR/RR-TB caused 250,000 deaths in 2015 and most cases and deaths occurred in Asia.<sup>1</sup> About 9.5% of MDR-TB cases have additional drug resistance, extensively drug-resistant TB (XDR-TB). To date, 117 countries worldwide have reported at least one XDR-TB case. In Bangladesh, estimates showed that the prevalence of MDR-TB among new and previously treated patients was 1.4% and 29%, respectively.<sup>2</sup> Bangladesh is one of those 27 countries which have high burden of MDR-TB.<sup>4</sup>

The treatment expense of MDR-TB is very high, almost 6000 USD per person.<sup>5</sup> In 2014, van den Hof *et al.*<sup>6</sup> reported that MDR-TB patients face burdens like increase in hospital stay, loss of income and unemployment. The prevalence of MDR-TB is increasing.<sup>3</sup> This means that the economic burden on the society and the country will be increased too in the future with increasing number of MDR-TB cases. The problem can be exacerbated by the epidemiological transition<sup>7</sup> which Bangladesh is facing now like other developing countries.<sup>8</sup>

Studies have found that type 2 diabetes mellitus (T2DM) is a risk factor of development of MDR-TB.<sup>9-11</sup> Statistics also shows that Bangladesh has a huge burden of T2DM<sup>12</sup> and the prevalence is increasing day by day.<sup>13</sup> This dual burden of disease may increase the prevalence of MDR-TB among Bangladeshi population suffering from T2DM in the days coming forward.

Some may argue that the rate of MDR-TB in Bangladesh is low, thus it may not be regarded as public health problem. But it should be kept in mind that although the rate of MDR-TB is low, the total number of cases is much larger.<sup>11</sup> In 2014, the total estimated numbers of MDR-TB patients were 4,797.<sup>14</sup> There is also problem with low case detection rate.<sup>3</sup> The undetected cases remain untreated. These untreated cases can spread the disease in the community,<sup>15</sup> resulting in more increase of the prevalence. So although the rate is low, the real burden is much bigger.

Another important concern is the economic point of view. Tuberculosis treatment is funded entirely by the National Tuberculosis Control Programme. As the cost of treatment is more, as the burden increases,<sup>5</sup> and the total cost of treatment will rise. This will create a huge burden of the health system of the country. And as tuberculosis, specially MDR-TB is a chronic disease, the financial risk (income loss, indirect cost) for patients and their family is more.<sup>15,6</sup> So it is a public health problem that needs to be addressed immediately.

The National Tuberculosis Control Programme should focus more on this issue for better prevention and control of MDR-TB for the betterment of the individual and the country.

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