Editorial

Tuberculosis (TB) is a highly contagious lung infection that kills about 1.5 million people each year worldwide (WHO). It is one of the oldest diseases known to mankind and has been present in the human population since antiquity – fragments of the spinal column from Egyptian mummies from 2400 B.C. show definite pathological signs of tubercular decay. It has taken a heavy toll on mankind both in terms of lives and development. With the advent of chemotherapy with anti-TB drugs, drug resistance was reported very early. After the discovery of streptomycin, it was noted that case fatality from TB was significantly reduced. But at the same time it was observed that patients improved over the first few months and subsequently their condition deteriorated, in many cases it was due to drug resistance. Single drug resistance is found in almost all the countries treating tuberculosis with anti-TB drugs. However, multi/poly drug resistance (resistance to more than one drug) is the cause for concern. MDR-TB is defined as resistance to Isoniazid and Rifampicin, with or without resistance to other first-line drugs (FLD). MDR-TB is being increasingly reported these days. WHO estimated, there were about 650 000 cases of MDR-TB occurring world-wide in 2010.

In 2006, the first reports of extensively drug-resistant tuberculosis (XDR-TB), an even more severe form of drug resistant TB than multidrug-resistant TB (MDR-TB), began to appear. XDR-TB is defined as resistance to at least Isoniazid and Rifampicin, to any of the fluoroquinolones and to any of the three second-line injectables (Amikacin, Capreomycin, and Kanamycin). Within a year of the first reports of XDR-TB, isolated cases were reported in Europe that had resistance to all first-line anti-TB drugs (FLD) and second-line anti-TB drugs that were tested. In 2009, a cohort of 15 patients in Iran was reported which were resistant to all anti-TB drugs tested. The terms “extremely drug resistant” (“XXDR-TB”) and “totally drug-resistant TB” (“TDR-TB”) were given by the respective authors reporting this group of patients. Recently, a further four patients from India with “totally drug resistant” tuberculosis (“TDR-TB”) were described, with subsequent media reports of a further eight cases. The term “totally drug resistant” has not been clearly defined for tuberculosis, while the concept of “total drug resistance” is easily understood in general terms. The prognostic relevance of in vitro resistance to drugs without an internationally accepted and standardized drug susceptibility test therefore, remains unclear and current WHO recommendations advise against the use of these results to guide treatment. Lastly, new drugs are under development, and their effectiveness against these “totally drug resistant” strains has not yet been reported. For these reasons, the term “totally drug resistant” tuberculosis is not yet recognized by the WHO. For now these cases are defined as extensively drug resistant tuberculosis (XDR-TB), according to WHO definitions.

The discovery of patients with MDR or XDR-TB emphasizes the importance of ensuring that all care for tuberculosis, whether in the public or private sector, must conform to international standards in order to prevent the emergence of drug resistance. Almost all countries must, in addition, ensure appropriate diagnosis and treatment of cases of MDR-TB. National regulations for the quality and dispensing of anti-TB drugs, particularly of the second-line drugs, need to be strictly enforced.