



Editorial

A new free-cost e-service supporting clinicians to manage their difficult-to-treat tuberculosis cases: The European Respiratory Society-World Health Organization tuberculosis Consilium

The pandemic of multidrug-resistant tuberculosis (MDR-TB) and extensively drug-resistant TB (XDR-TB), respectively, defined as resistance to isoniazid and rifampicin, and to at least one fluoroquinolone and one injectable second-line anti-TB drug in addition to isoniazid and rifampicin, is attracting more and more interest¹⁻³.

Over 480,000 cases of MDR-TB (and 100,000 of rifampicin-resistant TB)¹ are challenging physicians all over the world, as treating these cases is long, expensive and clinically complicated²⁻¹⁰. Furthermore, the results are still largely suboptimal with success rates in the order of 50 per cent in MDR-TB patients, which become as low as 20 per cent (with 15% failure/relapse and 35% death rates)^{2,3,10} in cases harbouring *Mycobacterium tuberculosis* strains with resistances beyond XDR^{2,3}.

As recommended by the World Health Organization (WHO), when MDR-TB cases are managed by multi-speciality consultation bodies known as TB Consilium (including different medical professionalities, competencies and perspectives, e.g., clinical expertise - both for adults and children; surgical, radiological and public health expertise; psychological background and nursing experience, among others), the risk of making mistakes or inappropriate management is minimized and the clinical outcomes are improved⁴⁻⁷.

At present, several high MDR-TB burden countries in the different WHO Regions have introduced TB Consilium-like bodies at the national or subnational level to reach consensus on the best treatment approach for their patients. However, before the launch of the European Respiratory Society (ERS)/WHO electronic

TB Consilium platform in September 2012, there were no, at global level, free-access online mechanisms allowing peer-to-peer clinical consultation for individual TB patient, able to store data and analyzing whether existing prevention, diagnosis and treatment guidelines are properly followed^{4,5}.

It is well known that selection of resistant strains of *M. tuberculosis* is largely an artificial phenomenon¹¹⁻¹³ and that the correct management of difficult-to-treat cases of TB is useful to limit their development and spread. Moreover, in countries/settings where a formal system of consultation does not exist, specialized staff from MDR-TB reference centres or international organizations usually spend a considerable amount of their working time responding to phone or e-mail clinical queries on how to manage M/XDR-TB cases.

The ERS has demonstrated a strong leadership and commitment to eliminate TB^{14,15} through different initiatives¹⁶⁻¹⁸, including the TB Consilium. The ERS-WHO electronic TB Consilium was launched during the 30th ERS Congress in Vienna, on September 6, 2012. On this occasion, the WHO Regional Office for Europe signed a Memorandum of Understanding with ERS to coordinate and co-manage this initiative.

The aim of this article is to describe the results of this initiative and to advocate for its use in Asia, and specifically, in India. Overall, the ERS/WHO TB Consilium has different functionalities. The first function is clinical, and it specifically provides scientifically sound and evidence-based advice globally to national Consilium bodies and individual clinicians on how to manage drug-resistant TB and other difficult-to-treat TB cases (including co-infection with HIV,

paediatric cases and the challenging and adequate use of new drugs such as delamanid under compassionate use programme). Also by providing clinical guidance, the ERS/WHO TB Consilium contributes to prevent further development of drug resistance. Once sufficient data are stored, the TB Consilium will also allow to monitor and evaluate the quality of clinical practices in a given country or setting, in terms of prevention, diagnosis and treatment against established evidence-based guidelines.

The ERS-WHO TB Consilium operates rapidly, as it provides an answer to the clinical questions posed within 48 h. Its functioning is simple: after the clinician uploads a case request, specifying the case details and the question for the TB Consilium experts, the TB Consilium director receives the request and activates one of the clinical coordinators, who chooses two experts using the Expert Roster. A call for experts (including TB clinicians, but also other professionals relevant for patient management) preceded the launch of the TB Consilium. The expert applications have been reviewed and validated by an expert panel based on strict technical criteria, in agreement with the Swiss Law⁶. At the moment, more than 60 international TB experts from 22 countries are enrolled in the roster of TB Consilium. The clinical coordinator receives the experts' opinions and consolidates them with precise instructions to be reported to the requesting physician.

The TB Consilium e-platform (www.tbconsilium.org) can be accessed free of cost by any physician needing clinical support. The platform is of multi-language and presently operates in English, Portuguese, Russian and Spanish. The translation in French has also been planned.

The ERS-WHO TB Consilium platform has been presented to different countries, national TB programme managers and individual clinicians, and launched at the WHO TB Strategic Technical Advisory Group in Geneva, presented to the Childhood TB subgroup of the DOTS expansion group and regularly advertised by the ERS through its own publications [newsletter, European Respiratory Journal (ERJ), ERJ Open Research, European Respiratory Review, Breathe at www.ersjournals.com] and its website. Furthermore, the ERS-WHO Consilium has been also included in the curriculum of the WHO course for managers and consultants on how to apply the WHO's End TB Strategy, which is focused on the concept of TB elimination^{14,15}. It is organized twice a year in Cepina/Sondalo, Italy (www.publichealthcgc.com), and

replicated in different continents in different languages. The TB Consilium interim results have been published elsewhere^{4,5}.

The e-platform is evaluated at regular intervals^{4,7}. At present, over 250 cases from 33 countries have been supported by the ERS/WHO TB Consilium, including 24 cases in two different epidemics^{4,5}: 152 with MDR-TB (82 being XDR), including 30 children and 38 cases requesting delamanid within the compassionate use programme.

The average time needed by the physician to upload the case's details into the electronic platform was estimated to be <30 min by clients, with a mean value of 20 min. All clinicians reported to be satisfied by the TB Consilium services⁶.

A second function supporting the migrants' transborder issues has recently completed pre-testing in collaboration with the WHO. The system allows clinicians managing a patient in a given country to liaise with the country where the patient is planning to migrate during TB treatment or where the patient is coming from so that data can be exchanged and continuum of care can be ensured. This functionality will contribute to prevent management errors related to lack of information on the patient's previous medical history as well as early treatment interruptions after the patient's migration to a different country or destination.

A third function (completed in collaboration with the civil society organizations) will allow patients to directly request specific advice for their TB infection or disease to a physician, a nurse, a psychologist and/or to ask motivational support by other patients who survived the disease. This function will start operating in 2017 in collaboration with the European Lung Foundation, the patients' voice supported by ERS.

A fourth function under development is focused on non-tuberculous mycobacteria (NTM). The incidence of pulmonary infections caused by NTM is increasing rapidly worldwide. The vulnerable patient population includes those with chronic lung disease (chronic obstructive pulmonary disease, bronchiectasis and cystic fibrosis) and survivors of previous TB infection among others. Like with MDR-TB, patients with NTM infection require prolonged, toxic and complex antibiotic regimens. Unlike TB, there is a lack of high-quality research and a paucity of expert guidance around treatment. The ERS/WHO TB Consilium has already received enquiries about NTM infections, reflecting the high clinical need for advice in this area.

In conclusion, the ERS/WHO TB Consilium represents an effective instrument to support the WHO End TB Strategy and TB elimination^{14,15}.

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