section in Tunisia and the profession of a doctor is prestigious.

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IMPLEMENTATION OF DIRECTLY OBSERVED TREATMENT ON MULTI-DRUG RESISTANT TUBERCULOSIS PATIENTS IN YEREVAN, ARMENIA

R.S. Sankaran
Scientific director - L.G. Gevorgyan
Yerevan State Medical University after Mkhitar Heratsi

Tuberculosis (TB) is one of the important public health problems globally [31,p.5]. Multi-Drug Resistant tuberculosis (MDR-TB) is fetching more concern nowadays, owing to its intensive medical care requirement [30, p.5, 20, p.5]. The low and middle-income countries are the most victims [31, p.5]. As, Armenia is classified as one of the middle-income countries it is included in the WHO's TB risk regions with 3495 TB cases [33, p.5, 1, p.3].Though the morbidity and mortality rate of TB incidence in Armenia is reducing, it was reported that 9.4% of all TB cases in the country were MDR-TB, in 2016 [17, p.5, 26, p.5].The development of MDR in the country can be narrowed down to definite causes, notably, non-adherence to the treatment strategy leading to development of re-infection with drug resistance, poor awareness programs, poor quality of drugs, treatment plan, co-morbidities, and socio-economic status [9, p.4, 10, p.4, 22, p.5]. With increasing global MDR-TB cases at an alarming rate, WHO has developed and adopted Directly Observed Treatment (DOT) strategy [32, p.5]. Georgia, the neighbor of Armenia sharing its geographical and socio-economic situation as a post-Soviet country, has employed DOT in treatment of MDR-TB and showing hopeful results of treating the disease [3, p.4, 25, p.5]. With addition of newly developed drugs and revised DOT strategy, Armenia can provide better treatment to TB patients, ensuring comfortable post disease period and making way to the eradication of the disease [3, p.4, 25, p.5].

Tuberculosis (TB) is one of the top 10 causes of death globally [31, p. 5]. Tuberculosis been known to man-kind for around 4000 years [35, p.5].Development of resistance to antibiotic medications is usual and in the case of Mycobacterium tuberculosis is no different

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It is believed that the drug resistance formed was due to antibiotic abuse and improper medical interventions, which lead to spontaneous chromosomal mutation in the causative bacteria. Drug Resistant-TB (DR-TB) is classified as mono-drug resistant TB, poly-drug resistant TB, multi-drug resistant TB (MDR-TB) and extensively drug resistant TB (XDR-TB). Further, poor TB awareness national program, unsupervised treatment, lead to failure of treatment and development of drug resistance. In 2017, 121 countries have reported WHO of at least one XDR-TB case in their country.

TB disease manifestation is mainly seen in the lungs but also in other organ systems when the disease takes severe course. Chest pain, hemoptysis, chronic cough, fatigue or general weakness, fever, weight loss and night-sweats are the main clinical signs and symptoms of pulmonary TB. A non-drug resistant TB can be treated in around 6 months with first line treatment medications, but some strains of Mycobacterium develop mono- and multi-drug resistance which may require severe treatment for up to 18 months. In the 1960s, it was believed that TB was not a public health issue and that in future the disease would be eradicated completely. But to the surprise of public health professionals, TB became a concern in the 1980s with intensifying epidemic of the acquired immune deficiency syndrome (AIDS) and the development of drug-resistant forms of TB Mycobacterium.

Magnitude of the problem: only in 2016, 10.4 million people were reported to be affected with TB globally, and 1.7 million died, out of which 0.4% were HIV infected and low- and middle-income countries contributed around 95% of all TB deaths. Armenia is classified as one of the middle-income countries, but performing better in economic growth that its peers. In 2016, MDR and Rifampicin Resistance TB (RR-TB) caused 240,000 deaths, where most cases and deaths were reported from Asia. It was reported that in 2016, there were 600,000 new cases with rifampicin (first-line drug) resistance, out of which 490,000 had multi-drug resistance worldwide.

TB as a public health problem in Armenia remains alarming, with an estimated incidence rate of 44 new cases per 100,000 in 2016. TB morbidity in Armenia saw a decline from 47.6 in 2007 to 23.1 per 100,000 in 2017. The TB mortality rate was also reduced from 5.4 to 1.8 per 100,000 during the same period. WHO statistics infers that in Armenia, 9.4% of all TB cases reported to have MDR-TB. While global prevalence of MDR-TB in 2016 was estimated to be 11% among new and 47% among previously treated cases. Globally, TB incidence is sinking at about 2% per year. But this needs to be accelerated to a 4–5% decline to reach ‘The 2020 milestones of the End TB Strategy’.

Several factors have been identified for the development of MDR, include non-adherence to therapy, lack of direct observed treatment, improper drug supplies, poor quality of drugs, easy accessibility of anti-TB drugs without prescription, poor medical management, and poorly-managed national control programs. A study identified that age 18 to 45 years, education at secondary school level, service field and business as profession, smoking history, and type-2 diabetes as risk factors of comorbidities. The existence of MDR-TB is mainly attributable to human factors such as errors and delay in medical interventions that predispose for development of drug resistance, alsogenetics and genetic factors are also believed to be one of the important contributors.

A study conducted in the country of Georgia, a neighboring nation, sharing the geographical and economic situation to Armenia, revealed that MDR-TB were noted mostly in patients who did not adhere to strategy during intensive and continuous therapeutic processes. This led to disturbance of TB bacterial death and growth cycles, causing discrete mutations of different independent genes to accrue. Further, a study in other setting detailed that MDR-TB cases were prevalent among the older age. Furthermore, majority of the global MDR-TB cases were from low socio-economic groups. In Armenia, the most TB cases were reported from the Shirak region.
which is considered as the poorest region of the country and the Yerevan city as the ‘average’ [23, p.5]. Another significant key determinant for TB in Armenia, is the success rate of treatment for sputum smear-positive cases has never reached WHO’s target of 85% in the past decade and half [8, p.4].

Recommended interventions: WHO recommends the adoption of DOT approach to tackle the predicament situation of rising MDR-TB and in the TB treatment [32, p.5]. In DOT, the chemotherapeutic interventions are carried in attendance of a health care professional at prescribed time to ensure proper and precise following of treatment plan [24, p.5]. Implementation of DOT has been a revolution in the TB control Globally, it has become the basis in the treatment of tuberculosis [29, p.5]. China [34, p.9], Bangladesh [12, p.4] and Georgia [14, p.4] have employed the DOT program and have seen promising results. There has been steady increase in the number of countries adopting WHO’s DOT strategy [29, p.5]. In the last 15 years, around 35 million TB patients were cured, and around 8 million deaths were prevented with DOTS adoption worldwide [21, p.5].

For the first time in five decades, two new drugs, Bedaquiline and delamanid, have been developed and approved to have ‘WHO interim policy guidance’ for their usage for MDR-TB treatment [3, p.4]. A cohort study of effective treatment using four to five drugs for 15–24 months in Armenia, Georgia, Swaziland, Uzbekistan and Kenya between 2001 and 2011 was conducted [2, p. 4]. Two thirds of all MDR-TB Patients who benefited from bedaquiline and delamanid were involved in the study [2, p. 4]. WHO devised five priorities on MDR-TB intervention and prevention strategy such as ensuring good access MDR-TB care, implementing control measures on disease transmission, providing immediate access to effective treatment, strong commitment from government and politics sector [20, p. 5]. The advantages of DOT outweigh its disadvantage and all key determinant problems were met [15, p.4].

Treatment of drug susceptible TB conducted by national TB programs (NTPs) using standard four drug therapies and DOT strategy has led to relapse-free cure rates over 95% and declines in TB incidence [13, p. 4]. As reported on June 2017, 55 countries had imported delamanid and 89 countries started using bedaquiline [30, p. 5]. These new medicines were provisionally agreed to be used in the treatment of MDR-TB by stringent regulatory authorities in recent years [30, p. 5].

“To ensure the expansion of the Stop TB Strategy in Armenia, the Minister of Health took over the management of the National Tuberculosis Program (NTP) in 2010” [28, p. 5].

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A doctor’s profession in all times and in all countries is considered to be respected and honored. Firstly, doctor is an intelligent person, who never stops studying and strives to get new knowledge every day. Secondly, this profession and overall oblige person to cultural behavior. Moreover, person who chooses medicine like a life path must maintain rules of honor and merit. Thirdly, every doctor should have internal force and strength. I guess, that this fortitude is indispensable companion of doctor, only due to it doctor is capable to give an objective mark of patient’s condition, commit patients’ curation. Therefore, a genuine doctor can be only a person with higher medical education whose personality qualities include above-listed points [1, p.14].

In my country the attitude to doctor’s profession is very tremulous. First of all, it’s inseparably linked with military conflict in the Donetsk People’s Republic. In my opinion, this war brings to impetuous development of military medicine, without which the army can’t exist. The term military medicine has a number of potential connotations. While in some cases it refers to the occupational health chapter of the profession of medical officers and other medical doctors employed in military units, the term may also refer to the entire set of competencies and professions linked to medical care in the military. Military medicine is important in both war and peace. Military medicine plays a key role in supporting and maintaining health, in preventing injuries and diseases in military staff and in enhancing the military armed forces during war. Additionally, military medicine participates in actions such as emergency public health crises, natural disasters, emerging conflicts and anti-terrorist campaigns during peacetime. Military medicine is an important field in biological and medical sciences [2, p.42].

Military doctor is a person with high medical education, who as a military rank. He main charges of medical officer are:

1. Preventing soldiers’ diseases and mass epidemic;
2. Control of performing sanitary standards and norms in army, sanitary and hygienic supervision;
3. Medical and preventive work, rendering a medical aid and care;
4. Organization of lectures about rendering a first medical aid;
5. Management an evacuation of wounded soldiers from battlefield;
6. Surgery treatment of aggrieved people;
7. Controlling a volume of medical provision (for instance, dressing materials delivery);
8. Curation of medical examinations [4, p.67].

The armed forces are affected by many elements, such as military equipment, technology, organization and human resources; however, the