

# Tuberculosis, AIDS and Malaria: Serious Global Threats

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A great number of researchers and specialists from more than 25 countries of the world with more than 1000 Iranian participants specialized in respiratory diseases and related fields were gathered for 4 days to attend the second international congress of pulmonary diseases, intensive care and tuberculosis which is held every two years in Tehran with the cooperation of European Respiratory Society (ERS).

Prof. Martin Muers, secretary general of ERS, Prof. Gerhard Sybrecht treasurer of ERS, Prof. Elsony, president of International Union Against Tuberculosis and Lung Disease (IUATLD), and Dr. Nils Billo executive director of IUATLD all attended the congress. Scientific chairman of the congress, Prof. Mohammad Reza Masjedi is general secretary of IUATLD as well.

One of the important issues discussed in this congress was the status of HIV and AIDS and their mutual effect on TB control.

According to WHO report in 2005, 38.6 (33.4 - 46) million people were infected with HIV in the world.

There were 4.1 million new cases and 2.8 million deaths due to HIV in the year 2005.

In Asia, there were 8.3 million people infected with HIV more than two third of which live in India.

In 2005, 930000 new AIDS cases and 600000 deaths due to HIV were reported in Asia.

Based on the latest report of the ministry of health-Iran, there were 12500 HIV infected cases in 2005 while this figure is 66000

according to WHO estimate, out of which, 11000 are female.

According to same report, 16000 deaths are reported to be as the result of HIV in the year 2003.

TB infection in the world has another story. According to WHO report, nine million new TB cases were reported in the world in 2004. Also, two million tuberculosis deaths were reported as well.

According to same report, TB prevalence in 5 out of 6 WHO regions was considered stable or falling but in Africa TB epidemics is rising due to HIV overflow.

In fact, more than 80% of TB cases live in Asian and sub-Saharan African countries.

According to the same report by WHO, the global case detection rate is still 53% which is far from the optimal rate detected to be 70%.

Among new TB cases, 3.9 million were smear positive out of which 741000 were infected with HIV as well in the year 2004.

Prof. Asma El Soni, president of the International Union against Tuberculosis and Lung Disease (IUATLD) described a tragic scene of TB spreading in African-Asian countries and our neighboring countries of the former Soviet Union.

Dr. Billo, the executive director of IUATLD advocated that every patient infected with HIV should be tested for TB and each TB patient must be examined for HIV in high prevalent areas as well. He also stated that our medical knowledge and epidemiological evaluations

demonstrated that HIV is the most important risk factor known to increase the risk of TB.

The combination of AIDS and TB indicates that in HIV infected patients, the risk of TB is increased up to 10 times.

WHO surveys in Africa demonstrated that TB infected patients are mostly seen in parts of the society in which HIV exists. Therefore, WHO recommended to all nations to put TB/HIV control measures as a priority in their health program.

Since March 24<sup>th</sup> 1882 when TB bacillus was discovered by Robert Koch and presented to the world, to date which is about 123 years, TB is still one of the life threatening diseases of the world. Therefore, WHO has put control and prevention of TB, AIDS and Malaria as the first priority for international consideration and collaboration.

The biological characteristics of TB bacillus are different from other pathogenic microbes due to the body structure of the bacillus. A lipid layer surrounds the bacillus and protects it from the physical and chemical factors such as heat, cold, humidity, dryness and various disinfectants. This is why the risk of TB infection spread is increased in the community. Commonly a pulmonary TB patient expectorates his/her saliva, containing billions of bacilli on the ground which is dried and scattered by dust particles after a short while. Person exposed to these germs might be infected by respiration.

According to the reports of researchers, each TB patient, if not treated, can infect 15 to 20 healthy individuals every year. That's why we have to take the IUATLD warnings seriously.

The union has a famous recommendation as "In case of coughs more than two weeks, weight loss, fever and night sweats TB must be taken into consideration".

Robert Koch one hundred years ago while receiving the Nobel prize in medicine on

December 12<sup>th</sup> 1905 in Stockholm warned that : "In my first article in regard to TB etiology, I emphasized on the risk of spreading bacilli by sputum of TB patients which requires preventive measures to be under taken. But my words were disregarded and suffered a destiny similar to other medical dilemmas". Koch then pointed out the importance of informing people and the role of newspapers in this regard. He also said: "prior to every thing else an effort must be made and articles must be published in newspapers informing and warning people in this regard", a problem which is yet to be solved. We still need to inform people, the authorities and medical community in regard to TB control.

One of the points brought up in Tehran international congress was the obligatory announcement of the disease by physicians.

Dr. Masjedi the scientific chairman of the congress pointed out the fact that more than fifty percent of TB patients in Iran are diagnosed by private practice physicians and private laboratories. Unfortunately, only a few of them report their statistics to health centers. The point Koch had noticed a hundred years ago:

"The fight against all contagious diseases starts with the obligatory report of physicians to health centers. Otherwise, many cases will remain unrecognized and I know that there is a resistance in physicians towards the obligatory reporting of TB."

For this purpose the meeting called upon the Ministry of Health to pass the bill for "obligatory reporting of TB cases by medical centers" through the government and to the parliament for legislation and implementation. The Red Crescent, Insurance Companies such as Social Security Organization, Military services and Guard Corporation, and all medical organizations in the country should cooperate closely in this regard, so that by having a

precise statistics of TB and HIV cases, we can design a comprehensive and accurate program. MDR-TB is another major obstacle to control tuberculosis.

Unfortunately, the combination of TB and AIDS has worsened this worldwide problem which is called "primary drug resistance". Countries such as Azerbaijan, Kyrgyzstan, Turkmenistan, Russia, Estonia, Lithuania and many African countries have encountered the resistance phenomenon whose statistics were presented at the congress.

Approximately, 100000 Tomans (Iranian money=110\$) are spent for a TB patient who has been diagnosed in early stages and has used his drugs under the supervision of health care personnel or his family. But if this patient is infected with resistant TB bacilli for any reason, he must undergo treatment with expensive second and third generation drugs costing almost 50 million Tomans (X 500) per case.

In 1986, in New York City more than one billion dollars was spent to treat 158 MDR- TB cases out of which some passed away.

Considering all these factors, the importance of early diagnosis and precise treatment of the disease to prevent microbial resistance is apparent.

Another important issue that was discussed during the congress was the establishment of Non-Governmental Organization (NGO) to help the government in the control of TB and HIV.

The ingenuity of Koch was that he mentioned this issue a hundred years ago and said: "The factors I mentioned such as registering the patients, hospitals, sanatoriums and social care centers comprise our heavy artillery against TB .Other than these, there are some light weapons which can not be disregarded: First of all, tasks which people must undertake directly: establishing associations and unions (confederations) which can help in this regard and with their financial supports can establish sanatoriums and hospitals and free beds could be prepared to help poor families of TB patients", and last but not least, strengthening of laboratory networks in the area of TB control. Quality control and quality assurance of this Lab-network in the region, training of expert staff along with providing the required equipments are of the main actions to be considered.

The new generation of medical students and young physicians can make promising efforts in TB control in our country as well as in neighboring countries.