

## HIV-Tuberculosis Co-Infection

Roya Alavi-Naini,<sup>#1</sup> Mina Parsi<sup>1</sup>

Received: 1 May 2012

Accepted: 17 May 2012

Available online: 20 May 2012

1. Research Center for Infectious Diseases and Tropical Medicine, Zahedan University of Medical Sciences, Zahedan, Iran

Tuberculosis (TB) is one of the main causes of morbidity and mortality in different countries. In the year 2008 an estimated 8.9-9.9 million new cases of TB and 1.1-1.7 millions deaths were estimated globally [1]. The incidence of TB has been declined significantly in Iran during the past three decades. The highest incidence of TB belongs to Sistan and Balouchestan in south-eastern Iran.

Sistan and Balouchestan is the largest province of Iran that has a long distant border with Afghanistan and Pakistan, two countries with high TB prevalence. The incidence of TB in Iran was reported 13.7 per 100,000 population in 2009 but in Sistan and Balouchestan the incidence was much higher due to neighborhood with those countries. The incidence of TB was estimated to be 109.7 per 100,000 population in the northern part of this province and in the southern region 36.6 per 100000 population in the year 2009.

In the last report of Zahedan University of Medical Sciences, 297 TB patients were reported from March 2011 to March 2012. Among those patients, 220 were pulmonary TB and 166 were sputum smear positive. A hundred and twenty-eight TB patients (43%) were male and more than 50% were more than 45 years old [2]. Tuberculosis and HIV are closely connected as their relationship is often described as a co-epidemic. The problem is complicated by spreading of HIV infection which causes AIDS pandemic and the emergence of multidrug-resistant strains. HIV infection progresses to active disease in people infected with tuberculosis. HIV infected individuals co-infected with tuberculosis have an annual risk of 5-15% of developing active tuberculosis [3]. In the last decades the number of new TB cases has significantly increased in countries with high prevalence of HIV infection. Tuberculosis is both treatable and preventable, incidence rates continue to rise

in developing nations where HIV infection and tuberculosis are endemic and resources are restricted. Approximately 10 million people are estimated to be co-infected with M tuberculosis and HIV, and over 90% of those co-infected patients reside in developing countries. In some areas of sub-Saharan Africa, the rates of co-infection even exceed 1,000 per 100,000 population [4].

Approximately one-third of the 38.6 million HIV-positive individuals in the world are infected with TB and are at increased risk of developing tuberculosis too [5]. All persons who were diagnosed with HIV infection should be tested for TB and people living with HIV and at risk for TB exposure should also be tested annually for latent TB infection. Tuberculosis is the most common cause of mortality among patients with AIDS in the world, killing approximately one of every three patients [6].

HIV prevalence among TB cases were estimated 13%, 12% and 3.8% in the world, eastern Mediterranean region and Iran, respectively. Fortunately Iran is classified as a low prevalence country for HIV infection.

The total number of HIV infected individuals in Iran and Sistan and Balouchestan were reported 24000 and 615, respectively [2]. Approximately 90% of the HIV infected patients in this province consisted of male who traveled to Emirates for business or seeking job; and intravenous drug users (IVDUs). In a pilot study at Zahedan the center of Sistan and Balouchestan only 3 out of 180 TB patients were HIV positive that all of them were IVDUs [7]. Therefore it seems that HIV testing in TB patients in this part of the country should be performed in patients who had high risk behaviors for HIV infection and is not necessary to be done in all TB patients.

Copyright © 2012 Zahedan University of Medical Sciences. All rights reserved.

### References

1. World Health Organization. Global Tuberculosis Control: short update to the 2009 report. World Health Organization; 2009. [http://www.who.int/tb/publications/global\\_report/2009/update/en/index.html](http://www.who.int/tb/publications/global_report/2009/update/en/index.html) Accessed at March 20, 2011.
2. CDC. Reported tuberculosis and HIV infection in Sistan and Balouchestan, Iran: CDC. Regional Health Center: Zahedan University of Medical Sciences; 2010.
3. Corbett EL, Watt CJ, Walker N, et al. The growing burden of tuberculosis: Global trends and interactions with the HIV epidemic. *Arch Intern Med* 2003; 163(9): 1009-21.
4. Dye C, Scheele S, Dolin P, et al. Consensus statement. Global burden of tuberculosis: Estimated incidence, prevalence, and mortality by country. WHO Global Surveillance and Monitoring Project. *JAMA* 1999; 282(7): 677-686.

- 
5. Oluwagbemiga AE. HIV/AIDS and family support systems: A situation analysis of people living with HIV/AIDS in Lagos State. SAHARA J 2007; 4(3): 668-677.
  6. Raviglione MD, Snider DE Jr, Kochi A. Global epidemiology of tuberculosis: Morbidity and mortality of a worldwide epidemic. JAMA 1995; 273(3): 220-226.
  7. Alavi-Naini R, Dadras M. The prevalence of HIV infection in tuberculosis patients. Proceeding of the 17<sup>th</sup> Iranian Congress of Infectious and Tropical Diseases. Tehran: Tehran University of Medical Sciences; 2006.