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Tuberculosis, hepatitis C and hepatitis B co-infections in patients with HIV in the Great Tehran Prison, Iran

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ABSTRACT

We conducted a study to evaluate tuberculosis (TB), hepatitis C and hepatitis B co-infections in male patients with HIV in the Great Tehran Prison from October 2013 to May 2014. Among 85 HIV positive patients, five persons (5.9%) had TB. Also, 56 new HIV-infected patients were checked for hepatitis B surface antigen and hepatitis C virus antibody. There were three hepatitis B surface antigen (5.4%) and 50 hepatitis C virus antibody (89.3%) results. This study suggests that it is necessary to investigate TB, hepatitis C and hepatitis B in HIV positive prisoners in Iran.

Keywords:

Tuberculosis
Hepatitis C
Hepatitis B
HIV

1. Introduction

HIV/tuberculosis (TB) co-infection is regarded as one of the most common co-infectious disease among people living with HIV (PLHIV) in prisons. Most importantly, HIV is the most substantial risk factor for active TB[1]. The prevalence rates of HIV-TB co-infection among HIV positive prisoners were reported 24.4% in Iranian prisons[2], 2.1%–3.8% in Georgia[3], 43% among HIV positive injecting drug users in Barcelona, Spain[4], and 20% in Lyon, France[5].

Due to shared modes of transmission, hepatitis B virus (HBV) and C virus (HCV) have a very high prevalence among PLHIV, with the highest rates in regions where injecting drug users predominate in the HIV epidemic[5]. Evaluating 201 HIV positive cases at a main referral center for PLHIV in Iran during 2004–2005 indicated 27 patients with positive hepatitis B surface antigen (HBsAg) (13.4%), 60 patients with positive anti-HBc (29.8%), and 23 patients with positive anti-HBs (11.4%). Anti-HCV antibody (HCV Ab) was positive in 135 patients out of the 201 (67.2%)[6].

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2. Materials and methods

We conducted a study in the Great Tehran Prison from

October 2013 to May 2014. Institutional review board of Tehran University of Medical Sciences approved the study protocol. Active case findings of HIV and TB programs were employed by the prison's clinic staffs who trained the prisoners about HIV-related risk factors and the symptoms of TB, including chronic cough, sputum, fever, night sweats, and weight loss. Then, all prisoners with suspected TB symptoms and/or HIV risk factors were referred to the clinic. Also, HBsAg and HCV Ab were requested for all HIV positive patients.

3. Results

A total of 85 individuals were detected with a positive HIV, consisting of 56 new cases and 29 old cases among 6900 prisoners, which indicated a prevalence of 1.2%. Among 85 HIV positive patients, five persons (5.9%) had TB and received TB treatment through directly observed therapy. We also tested 56 new HIV positive patients for HBsAg and HCV Ab. There were three people with HBsAg⁺ (5.4%) and 50 HCV Ab⁺ (89.3%).

4. Discussion

The rate of HIV/TB co-infection prevalence indicated the requirement of evaluating active TB among HIV positive patients in prisons. Furthermore, as the study showed, the rates of HBV-HIV and HCV-HIV co-infections were significant among PLHIV in Iranian prisoners. A greater relevance was observed in the relationship between HCV and HIV. In line with our study, in a cross-sectional study among 499 male injection drug users in Detention, Tehran, Iran (2006), prevalence of HBsAg was 5.8% [7]. Of the 417 participants, HIV and HCV prevalence were 24.4% and 80%, respectively. One hundred out of 112 (89.3%) HIV-positive patients had HCV infection in the survey [8].

The high prevalence of HBsAg shows the requirement for particular efforts to increase vaccination among adult people at risk for HBV infection in order to decrease ongoing transmission. This study also suggests that it is necessary to investigate risk factors and risk groups associated with these infections among prisoners in Iran.

Conflict of interest statement

We declare that we have no conflict of interest.

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