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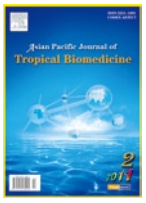

Document heading

Presentation of tuberculosis in TB-HIV co-infection patients and the treatment outcome with directly observed short course therapy

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ABSTRACT

Objective: To investigate different presentations of tuberculosis in HIV positive patients and their treatment outcome with directly observed short course therapy (DOTS). **Methods:** All patients having tuberculosis-HIV (TB-HIV) co-infection were taken. Different manifestations of tuberculosis in HIV positive patients were analyzed. Outcome of the treatment was observed in 14 patients. The rest of the patients were either transferred to other districts or still continuing their DOTS therapy according to the revised national tuberculosis control programme (RNTCP). **Results:** A total of 901 patients were diagnosed as tuberculosis. Out of these, 227 had positive pulmonary tuberculosis smear, 212 had negative smear and 462 had extra pulmonary tuberculosis. A total of 65 patients suffered from TB-HIV co-infection (7%). Result showed that the incidence of TB-HIV coinfection was the highest in productive age group of 16-45 years old (75%). Treatment completion rate was only 57% and the rate was higher in extra pulmonary tuberculosis patients (83%). Out of 4 sputum positive cases, 3 were declared cured (75%). **Conclusions:** TB-HIV co-infection in wardha (Cental India) is around 7%. Pattern of tuberculosis in HIV positive patient is the same as in HIV negative patient. Pattern of extra-pulmonary tuberculosis in HIV positive patients is mainly in form of tubercular lymphadenitis and pleural effusion. DOTS is the best modality of treatment of tuberculosis.

1. Introduction

Tuberculosis is the oldest of the world's current pandemics and causes 8.9 million new cases and 1.7 million deaths annually. The disease is among the most common causes of morbidity and mortality in people living with HIV. However, tuberculosis is more than just part of the global HIV problem; well-resourced tuberculosis programmes are an important part of the solution to scaling-up towards universal access to comprehensive HIV prevention, diagnosis, care, and support[1]. The present study was done in a tertiary rural hospital of Central India during period of March 2005 to November 2006 to investigate different presentations of tuberculosis in HIV positive patients and their treatment outcome with directly observed short course therapy (DOTS).

2. Materials and methods

This cross-sectional study was done in Department of Pulmonary Medicine at a tertiary care hospital (affiliated to medical college) catering the need of rural population of central India. All patients having tuberculosis-HIV (TB-HIV) coinfection were included in the study. At the baseline, all potential subjects had a physical examination and standardized interview that included questions about weight loss in the past 3 months, and about the presence and duration of any cough or fever. All subjects had a baseline chest X-ray and 3 expectorated sputum samples for microbiologic testing of acid-fast bacilli were submitted. Diagnosis of extra-pulmonary tuberculosis was made according to site of involvement and fine needle aspiration cytology/histopathology of tissue to test tubercular inflammation or acid-fast bacilli. Human immunodeficiency virus testing was done after pretest counseling and informed consent being written. The diagnosis of HIV infection was based on three positive tests (Tridot, J. Mitra and Comb ADIS, Span Diagnostics) followed by an ELISA (Lab System, U.K.). Different manifestations of tuberculosis in HIV positive patients were analyzed. Outcome of treatment was observed in 14 patients. Rests of patients were either transferred to other district or were still continuing their DOTS therapy according to revised national

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tuberculosis control programme (RNTCP) at that time. This study was approved by Institutional Ethical Committee and District Tubercular Centre (DTC), Wardha.

3. Results

A total of 901 patients were diagnosed as tuberculosis. Out of these, 227 had positives pulmonary tuberculosis smear, 212 had negative smear and 462 had extra pulmonary tuberculosis. A total of 65 patients suffered from both HIV and tuberculosis (7%). Result showed that incidence of TB-HIV coinfection was the highest in productive age group of 16-45 years old (75%) (Table 1). The ratio of incidence of pulmonary tuberculosis to extra pulmonary tuberculosis in HIV positive patients was almost 1:1. In pulmonary tuberculosis, the number of positive sputum cases (16) was the same as that of negative (16). Out of 33 HIV positive patients with extra pulmonary tuberculosis, 13 had tubercular lymphadenitis, 12 pleural effusion formed major group. Total treatment completion rate was only 57% (8/14) and extra pulmonary tuberculosis cases showed higher rate (83%, 5/6). Six patients were dead (43%, 6/14), including 5 pulmonary tuberculosis and extra pulmonary tuberculosis case. Out of 4 sputum positive cases 3 were declared cured (75%).

Table 1
TB-HIV coinfection according to age.

Age	Male	Female	Total
1-15	0	5	5
16-30	20	3	23
31-45	26	6	32
46-60	3	1	4
61-75	1	0	1

4. Discussion

In the present study, rate of TB-HIV coinfection is 7%. This is similar to a study done in Tamil Nadu in which the overall HIV seroprevalence among tuberculosis patients was 4.7%. The highest HIV seropositivity rate is found among patients aged 30-39 years old (10.6%). HIV seroprevalence showed a wide variation among the different centers ranging from 0.6% in DTC, Kancheepuram to 9.4% in Pennathur Sanatorium, Vellore[2]. Sputum smear positivity was 88% among the HIV-negative and 83% among HIV-positive tuberculosis patients[3] but unlike study done in Spain in which rate of HIV coinfection was 38.8%. 39% of cases had the presentation as exclusively pulmonary and 25% was disseminated[4]. Incidence of TB-HTV coinfection in the present study was higher in productive age group of 16-45 years old. Also, ratio of pulmonary tuberculosis to extrapulmonary tuberculosis was found to be equal. This is in favour to a study done in Varanasi suggesting that inclusion of tuberculosis in clinical case definition of AIDS is not justified[5]. In extra-pulmonary TB-HIV coinfected patients, tubercular lymphadenitis and pleural effusion are the commonest manifestations, which is similar to a study done in Kolkatta, in which 472 patients (29.2%) out of 1616 HIV positive patients were found to have persistent generalized lymphadenopathy[6]. 83% of cases completed their treatment in extra-pulmonary group whereas 3 (75%) out of 4 sputum smear cases were declared cured in the present study, suggesting that RNTCP is the best modality of treatment of tuberculosis in TB-HIV coinfection. This was also reported by Williams *et al* using a mathematical model to capture the spatial and temporal variation in tuberculosis and HIV in India. They predict that, without the RNTCP, HIV would increase tuberculosis prevalence (by 1%), incidence (by 12%), and mortality rates (by 33%) between 1990 and 2015. With the RNTCP, however, they expect substantial reductions in prevalence (by 68%), incidence (by 41%), and mortality (by 39%) between 1990 and 2015. In India, 29% of adults and 72% of HIV-positive adults live in four large states in the south. But even with the RNTCP, mortality is expected to fall by only 15% between 1990 and 2015. Nationally, the RNTCP should be able to reverse the increase in prevalence of TB-HIV infection. However, to ensure that tuberculosis mortality is reduced by 50% or more by 2015, HIV-infected tuberculosis patients should be provided with antiretroviral therapy in addition to the recommended treatment of tuberculosis[7].

TB-HIV coinfection in Wardha (Central India) is around 7%. Pattern of tuberculosis in HIV positive patient is the same as in HIV negative individual. Pattern of extrapulmonary tuberculosis in HIV positive patients is mainly in form of tubercular lymphadenitis and pleural effusion. DOTS is the best modality of treatment of tuberculosis in India.

Conflict of interest statement

We declare that we have no conflict of interest.

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