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LETTER-TO-THE-EDITOR

Erythrocyte Sedimentation Rate May Be an Indicator for Screening of Tuberculosis Patients for Underlying HIV Infection, Particularly in Resource-poor Settings: An Experience from India

Sir,

India has been experiencing the most serious public-health challenge caused by HIV epidemic since its first detection in 1986 (1). The country has an estimated 4.58 million HIV-infected individuals (2). Prevalence data on HIV infection collected from various parts of the country indicate its spread from urban to rural areas and from high risk to general population (3). Because of continued HIV transmission in the community for the last many years, the country is witnessing several opportunistic infections associated with HIV infection, of which tuberculosis (TB) is the most prominent.

Early detection and effective treatment with regular follow-up until complete recovery is the most important strategy to control the spread of tuberculosis in the community. India needs special attention to control TB as the country harbours a large number of TB patients and many of whom are associated with HIV infection. The effects of HIV on TB include: (a) More transmission of TB bacteria in the community, (b) TB progresses faster in HIV-infected people, and (c) TB in HIV-positive people is more likely to be fatal if diagnosed late or left untreated (4).

Unfortunately, the HIV status of a sizable number of tuberculosis patients detected by the local physicians remains unknown due to the shortage of HIV testing facilities. The present study, conducted at the National Institute of Cholera and Enteric Diseases (ICMR), Kolkata, India, was aimed at finding a positive predictive factor in tuberculosis patients, particularly in resource-poor settings, so that underlying HIV could be detected to a great extent using minimum diagnostic resources.

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Data of routine investigations of 34 pulmonary tuberculosis patients associated with HIV infection, diagnosed during July-December 2003, were reviewed. The routine investigations included total count (TC), differential count (DC), haemoglobin (Hb), erythrocyte sedimentation rate (ESR), and mode of diagnosis. The data were compared with data from a similar group of pulmonary tuberculosis patients (n=25), who were detected during the same time but not associated with HIV infection.

There was not much difference in basic investigations between these two groups, except in ESR values. Most tuberculosis patients with HIV infection had a much lower ESR value compared to the control group. The mean and median values of ESR, respectively, were 38.5 mm per hour and 30.0 mm per hour among patients with HIV infection (n=34) compared to 102 mm per hour and 108 mm per hour among those without HIV infection (n=25).

Table 1 shows the relationship between TB with or without HIV infection and ESR status, and Table 2 shows the age distribution of TB subjects of both the groups.

Table 1 also shows that there was a significant difference between distributions of ESR values between these two groups ($p=<0.00001$).

Other ESR influencing variables, such as age, sex, method of estimating ESR, haemoglobin status, etc., were comparable in both the groups.

It probably holds true that a lower ESR in a detected tuberculosis case might be associated with HIV infection, particularly in a developing country like India. The higher the ESR value, the lower is the chance of associated

Table 1. Relationship between TB with HIV infection and ESR status

HIV status	Up to 30 mm/hour (n=18)	31-45 mm/hour (n=4)	46-60 mm/hour (n=6)	61-75 mm/hour (n=3)	76-120 mm/hour (n=28)	Total (n=59)
TB with HIV subjects (n=34)	18	4	6	2	4	34
TB without HIV subjects (n=25)	0	0	0	1	24	25
χ^2 =42.23; p value=<0.00001						

HIV infection. In this study, the positive predictive value of ESR at a cut-off point of 60 mm per hour or less was 80%. An ESR rate of 60 mm per hour or below should indicate suspicion about underlying HIV association, which could be used as a marker for screening of HIV

Table 2. Age distribution of tuberculosis patients with and without HIV infection

Age group (years)	TB with HIV (n=34)	TB without HIV (n=25)
15-25	5	2
26-50	29	22
>50	0	1

status among TB patients, particularly in areas where HIV diagnostic facilities are limited. This would save resources, reduce workload, and would thereby strengthen the country's tuberculosis control programme by identifying more relationship between HIV and TB. As ESR is routinely done along with other basic investigations for the diagnosis of tuberculosis, we suggest that all physicians of similar situation look into the ESR value while initiating the treatment of their TB patients. They should ask for HIV screening of all TB patients, particularly if their ESR value is 60 mm per hour or lower. Once TB-HIV association is detected, it should be managed accordingly.

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