HBV, HCV AND SYPHILIS CO-INFECTIONS IN HUMAN IMMUNODEFICIENCY VIRUS POSITIVE BANGLADESHI PATIENTS: OBESERVATION AT TWO REFERENCE LABORATORIES

Dear editor,

Human Immunodeficiency Virus (HIV), Hepatitis B virus (HBV), Hepatitis C virus (HCV) and syphilis share certain epidemiological characteristics. In the post highly active antiretroviral therapy (HAART) era, life expectancy of patients with HIV has increased and the focus has now shifted to the management of concurrent illnesses such as chronic HBV and HCV infections, syphilis and other co-infections which have the potential to increase long-term morbidity and mortality.

Bangladesh currently has very low rates of HIV infection and unfortunately there is no existing information on the prevalence of HBV, HCV and syphilis co-infections among the HIV patients. Therefore, the Department of Virology, Bangabandhu Sheikh Mujib Medical University (BSMMU) and Armed Forces Institute of Pathology (AFIP) Dhaka; two referral centres for HIV/AIDS in Bangladesh, conducted a study on 118 preserved sera of HIV patients (age range 19 months to 58 years, average 31.24 years, 79 males and 39 females) from January 2005 to May 2007. The prospective blood donors (13,500) tested for HCV and HBV during the same period of time in AFIP were regarded as control group.

We found that, the overall prevalence of co-infections in HIV patients was 18.64% (22/118) and with hepatitis viruses alone it was 5.93% (7/118, all male). Triple infection with HIV, syphilis and HCV was detected in one patient only. The rate of detection of HBsAg was higher (4.24%, 5/118) in HIV positive patients than the control group (0.84%, P < 0.001), which indicates that the prevalence of HBV in HIV patients is more than the general population of Bangladesh but below the rate found in Western (16%) and Northern India (5.3%). The presence of anti-HCV among HIV patients was 1.69% (2/118) which is statistically significant (P < 0.05) when compared with the control group (0.08%). This rate was lower than the rate found in Thailand (7.8%) and Western (30%) and Northern India (2.43%).

Though we could not calculate the statistical significance of prevalence of syphilis in the study population due to lack of data in control group, Syphilis was the highest prevalent disease (16/118; 13.55%, 9 males and 7 females) among the HIV positive individuals. This rate was lower than the rate found among the sexually transmitted diseases (STD) suspected clinic attendees of Argentina (59.7%).

Liver disease due to chronic HBV and HCV infection is becoming a leading cause of death among persons with HIV infection worldwide. Therefore, it would be advisable to detect hepatitis virus co-infections in these patients at the earliest. Syphilis like genital ulcerative STDs provides great opportunity of transmission of HIV. As there is a risk of false-negative serology in syphilis, it is suggested that all HIV-positive patients should be treated with a penicillin based regimen. Also, patients presenting with syphilis should be offered HIV testing and vice versa. The higher rate of syphilis co-infection in HIV patients of Bangladesh emphasises the need of integrated HIV/STD intervention programs and effective surveillance system. The main limitation of this study was the lack of information about risk behaviours of the study subjects. However, we believe that these results will help to implement universal screening for syphilis, Hepatitis B and C viral infections in all HIV patients of Bangladesh.

References

2. Gupta S, Singh S. Hepatitis B and C virus co-infections in
ABNORMAL MORPHOLOGY OF BACTERIA IN THE CEREBROSPINAL FLUID OF A PATIENT ON ANTIBIOTICS

Dear Editor,

A 5-month-old male child was referred to our hospital with a diagnosis of sacral meningocoele with meningitis and hydrocephalus from a private hospital. He had been treated with cefotaxime and amikacin for a week prior to admission to our hospital. The exact dosage of the drugs received by the patient was not known. A ventric tap performed at our hospital yielded a turbid cerebrospinal fluid (CSF) with a cell count of 700 cells/mm³, predominantly polymorphs, glucose of 10 mg/dL and protein of 165 mg/dL. Gram stain of the CSF showed the presence of gram negative bacilli ranging from 5 to 60 μm in length, surrounded by an unstained zone, suggestive of a capsule. Long, filamentous forms (Fig. 1A), a few of them with central enlargement (Fig. 1B) were also seen. Culture of the CSF on 5% sheep blood agar and MacConkey's agar yielded a pure growth of Klebsiella oxytoca, sensitive to cefotaxime and amikacin by Kirby and Bauer's disc diffusion method. The gram stain morphology of the organisms recovered on culture was not unusual.

Cephalosporins and other beta lactam antibiotics which inhibit cell wall synthesis are known to produce morphological changes in susceptible organisms, both in vivo and in vitro. Bacteria usually divide by forming a central septum across the middle of the cell. [1] Penicillin binding protein 3 (PBP-3) is a transpeptidase that plays a crucial role in cell septation of gram negative bacilli. Beta lactam antibiotics can inhibit PBP-3 and thereby prevent the formation of the dividing septum resulting in abnormal elongation and filamentation of rod shaped bacteria.[2,3]

The patient was started on intravenous cefotaxime 400 mg, thrice a day (200 mg/kg/day) and amikacin 50 mg twice daily (15 mg/kg/day). Two subsequent ventric taps performed after 3 and 4 weeks of therapy respectively, yielded a clear CSF, which was bacteriologically sterile. Hence a ventriculo-peritoneal shunt was performed and the patient was discharged with an advice to follow-up.

Abnormal forms of bacteria have been observed in various clinical specimens including blood, sputum and cerebrospinal fluid of patients on antibiotic therapy.[3-5] The presence of such abnormal bacterial forms in the specimen of the patient, rather than in the culture of the specimen has clinical significance. Their presence may indicate a sub lethal antibiotic concentration at the site of infection resulting from a low dose of antibiotic or intermittent, possibly unsuspected antibiotic therapy.[4]

These bacteria are 'atypical' in morphology but usually can be recovered on routine culture media unlike L-forms, Figure 1:

*Corresponding author (email: <saifmunshi@yahoo.com>)
Received: 30-12-07
Accepted: 23-01-08