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Exposure to blood-borne viruses among healthcare workers in a tertiary care hospital in south India

Sir,

Healthcare workers (HCWs) are potentially at risk for human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV) infection through occupational exposures to blood and bloody body fluids. The first report of a HCW infected with the HIV by a needlestick, published in a medical journal in 1984,[1] launched a new era of concern about the occupational transmission of blood-borne pathogens. The risk of HIV transmission after a percutaneous exposure to HIV infected blood has been estimated to be approximately 0.3% and after a mucous membrane exposure its about 0.09%. The risk of developing hepatitis B on exposure to HBsAg and HBeAg positive patients was 22-31% whereas by comparison, exposure from HBsAg positive but HBeAg negative blood was 1-6%. The average incidence of anti-HCV seroconversion after accidental percutaneous exposure from an HCV positive source is 1.8% [range 0-7%].[2] A study by Mehta et al. in a tertiary care hospital, Mumbai, found that 580 HCWs got needlestick injuries in a six-year (1998-2003) time span in their hospital.[3]

We report a two-year prospective study of needlestick and sharp injuries among the HCWs in our 1400-bed, tertiary care referral hospital where >1000 HCWs are annually at risk of getting occupational accidental exposures. Over a period of two years, from April 2004 to March 2006, a total number of 78 cases of accidental exposures were reported. For all these cases, adequate counseling was done, relevant proforma was filled up and their written consent taken before including them in this study. The study was approved by our hospital ethical committee review board and thereafter a baseline status for anti-HIV, HBsAg and anti-HCV antibody testing was done using ELISA for all of them. All the HCWs were followed up to six months by serological testing according to the United States public health service guidelines to detect any seroconversion among them.[2] Out of the 78 reported cases (49 medical doctors, 20 dental doctors, six nursing sisters and three laboratory technicians), 60 of them had needlestick injuries (including hollow bore intravenous needle and solid surgical suture needle), there were 15 cases of sharp cut like scalpel and dental instruments’ cut and three cases had blood splash on eyes. Among these 78 cases, 43 HCWs got exposure from known serologically tested
HIV, HBV and HCV negative patients, 15 got exposure from HIV seropositive patients and two HCW were exposed to HBsAg positive patients. A total of 18 HCW's got occupational exposure from OPD patients and the sero-status of those patients was unknown. All the 15 HCW's who got HIV exposure were started HIV-PEP drugs immediately after evaluation and counseling. Nine out of them were given a basic regimen and the rest of them were given expanded regimen according to NACO guidelines.[4] In the two HCW's who got exposure from HBsAg positive patients, one was a non-responder to previous hepatitis B vaccination as his anti-HBs antibody titer was nil. He was treated with hepatitis B immunoglobulin (HBIG) and another full course of hepatitis B vaccine as routine schedule. And the other person's anti-HBs antibody titer was >110 mIU/ml, therefore no intervention was done for him as per CDC guidelines.[5] All the HCW's were anti-HIV, HBsAg and anti-HCV antibody negative and physically well till date after two years.

The study reflects the need for a safe working environment in all hospitals.

To conclude, although preventing blood exposure is the primary way of preventing occupationally acquired blood-borne viruses appropriate post exposure management is an important element of workplace safety. This requires constant education at regular intervals for every HCW.

Bairy I, Rao SP, Dey A
Department of Microbiology, Kasturba Medical College, Manipal - 576 104, India.

Correspondence:
Indira Bairy, E-mail: ibairy@yahoo.com

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