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Human immuno-deficiency virus co-infection with hepatitis b virus and baseline cd4+ t cell count among patients attending a tertiary care hospital, Nepal

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Background: Since 1981, when the first AIDS case was reported, worldwide, more than 34 million people have been infected with HIV. Almost 95% of the people infected with HIV live in developing countries. As HBV & HIV share similar routes of transmission by sexual intercourse or drug use by parenteral injection, co-infection is common. Because of the limited access to healthcare & HIV treatment in developing countries, HIV-infected individuals are present late for care. Enumeration of CD4+ T cell count at the time of diagnosis has been useful to initiate the therapy in HIV infected individuals. The baseline CD4+ T cell count shows high immunological variability among patients.

Methods: This prospective study was done in the serology section of the Department of Microbiology over a period of one year from august 2012 to July 2013. A total of 13037 individuals subjected for HIV test were included in the study comprising of 4982 males & 8055 females. Blood sample was collected by vein puncture aseptically with standard operational procedure in clean & dry test-tube. All blood samples were screened for HIV as described by WHO algorithm by Immuno-chromatography rapid kits. Further confirmation was done by biokit ELISA method as per the manufacturer's guidelines. After informed consent, HIV positive individuals were screened for HBsAg by Immuno-chromatography rapid kits (Hepacard). Further confirmation was done by biokit ELISA method as per the manufacturer's guidelines. EDTA blood samples were collected from the HIV sero-positive individuals for baseline CD4+ T count. Then, CD4+ T cells count was determined by using FACS Calibur Flow Cytometer (BD).

Results: Among 13037 individuals screened for HIV, 104 (0.8%) were found to be infected comprising of 69(66.34%) males & 35 (33.65%) females. The study showed that the high infection was noted in housewives (28.7%), active age group (30.76%), rural area (56.7%) & in heterosexual route (80.9%) of transmission. Out of total HIV infected individuals, distribution of HBV co-infection was found to be 6(5.7%). All co- infected individuals were married, male, above the age of 25 years & heterosexual route of transmission. Baseline CD4+ T cell count of HIV infected patient was found higher (mean CD4+ T cell count; 283cells/cu.mm) than HBV co-infected patients (mean CD4+ T cell count; 91 cells/cu.mm). Majority (77.2%) of HIV infected & all co-infected individuals were presented in our center late (CD4+ T cell count ;< 350/cu. mm) for diagnosis and care. Majority of co- infected 4 (80%) were late presented with advanced AIDS stage (CD4+ count; <200/cu.mm).

Conclusions: The study showed a high percentage of HIV sero-positive & co- infected individuals. Baseline CD4+ T cell count of majority of HIV infected individuals was found to be low. Hence, more sustained and vigorous awareness campaigns & counselling still need to be done in order to promote early diagnosis and management.

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