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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 percent 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 used 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 to 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%), and 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 coinfecting 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 & counseling still need to be done in order to promote early diagnosis and management.

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