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DETECTION OF HEPATITIS B VIRUS INFECTION IN A POPULATION OF HIV-1 INFECTED INDIVIDUALS IN RURAL ZIMBABWE (P-200)

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Poster Session: 6.2 Blood Safety - Transfusion Transmitted Disease (TTD) - Hepatitis –

Monday, 25 June 2007

BACKGROUND
Human Immunodeficiency Virus (HIV) and Hepatitis B Virus (HBV) share major risk factors for transmission. Occult hepatitis B Virus infection (OBI), defined as the presence of HBV DNA without detectable HBsAg, constitutes a special problem in the diagnostics of HBV. Other groups have found a higher risk of OBI in HIV-1 infected compared to HIV negative individuals, but OBI in HIV infected populations in sub-Saharan Africa is still not well defined.

AIMS
We wanted to study whether HIV-1 infection was associated with a higher exposure to HBV and an increased risk of OBI. Moreover we intended to explore whether an active HBV (HBsAg pos or HBV DNA pos) infection influenced the survival in a population in rural Zimbabwe.

MATERIALS AND METHODS
Serum samples from 343 individuals were tested for anti-HIV-1 by two different ELISA kits (Ortho and Recombigen, Biotech), HBsAg in two different ELISA kits (Ortho and Abbott Murex) and anti-HBc in one ELISA test (Ortho). A test sample of 33 HIV positive and 18 HIV-1 negative were tested for HBV DNA by Nucleic acid amplification test (PROCLEIX® TIGRIS® System, Chiron). Comparisons of proportions were made by Fisher's exact test. CD4 counts and viral load were compared by ANOVA analysis. Cox-proportional hazard ratio analysis was used to examine survival.

RESULTS
Our cohort included 343 individuals of whom 51.3 % were positive for HIV-1. Significantly more HIV-1 infected were anti-HBc positive than HIV-1 negative individuals 56.1% (CI 48.3-63.7) versus 38.8% (CI 31.6-46.5%) p= 0,002, indicating higher exposure to HBV among HIV positive individuals. We found no significant difference of active HBV infection estimated by anti-HBc and HBsAg between HIV-1 positive (6.3%, CI 3.5-10.8%)and HIV-1 negative (4.8%, CI 2.5-9.2%) persons. Preliminary results of HBV DNA showed an insignificant higher proportion of OBI among 33 HIV positive and anti-HBc positive individuals of (9.1%, CI 3.1%-23.6%) than among 18 HIV negative and anti-HBc positive persons (0%, CI 0%-17.6%). Our material showed no difference in CD4 count, HIV RNA and survival between HIV-1 infected persons being either 1) anti-HBc negative 2) anti-HBc positive as the only HBV serology marker or 3) actively infected with HBV.

SUMMARY/CONCLUSIONS
The serological detection of HBsAg is the widest used laboratory technique to the diagnosis of HBV. OBI is a known problem in the diagnostic field of HBV. The present study confirms a higher previous exposure to HBV among HIV infected African individuals.Our preliminary HBV DNA results further support that OBI is more frequent among HIV infected HBV exposed individuals. In areas like Zimbabwe with a high incidence of both infections - the detction of HBV seems to constitute a special problem.