ACTIVE HBV INFECTION IN SOME ESTONIAN RISK GROUPS

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Introduction

In nowadays, HBV infection is concentrated mainly in certain subpopulations, such as injection drug users (IDUs) and prisoners, holding out high epidemiological potential. Ongoing viral replication and infectiousness is indicated by the presence of HBV DNA or a positive result for hepatitis B envelope antigen (HBeAg).
Persons with active viral infection, mainly unrevealed, represent the major source of HBV and can transmit infection to others. No data are avaiable on the presence of active HBV infection in Estonian risk groups.

Materials and methods

Data from participants in multiple independent cross sectional studies among current IDUs (N=700) and prisoners (N=591) in 2007 and 2006, respectively, were included into the current analysis. The participants were aged 16-75, 84% were males.

Demographic variables and risk factors for HBV were obtained by standartized questionnaire.

Blood sera were collected and tested for HBV markers using a commercial EIA system before initiation of this study, and stored at -70º in sera bank at Department of Virology, NIHD. All sera positive for HBsAg were used for HBeAg testing and as the source of HBV DNA in the present study. Detection of HBV DNA has been performed by in-house PCR forwarded to the S-gene.

Results (see Table)

In total, the HBsAg prevalence was 3.2% (41 out of 1291 participants), from those 32% (n=13) were positive for HBeAg. HBV DNA was detected in 97.6% (40/41) HBsAg positive samples that indicates the ongoing active virus replication. Overall, 58% of studied persons were positive for anti-HBc, from those 45% had anti-HBc alone (in the absence of HBsAg or anti-HBs) as a surrogate marker of chronic low-level HBV DNA replication.

Conclusions

- The results showed the high rate of exposure to HBV with presence of ongoing viral replication in Estonian IDUs and prisoners.
- Detection of HBV DNA and anti-HBc should be recommended for monitoring of active and chronic low-level HBV infection for improvement the management and harm reduction services for these risk subpopulations.

Prevalence (abs/%) of HBV markers among study participants

HBV markers	IDUs, n= 700	Prisoners, n=591	Total, n=1291
HBsAg	23/3.3	18/3.1	41/3.2
anti-HBc	521/74.4	232/39.3	753/58.3
HBeAg	11/47.8	2/11.1	13/31.7
HBV DNA	23/100	17/94.4	40/97.6