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Seroprevalence of hepatitis E virus among liver transplant patients in Croatia: preliminary pilot study data

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Background: Hepatitis E virus (HEV) in post-transplant setting can lead to chronic infection and cirrhosis. Croatia has a growing transplant population and according to the International Registry in Organ Donation and Transplantation (IRODaT) with 28.8 LT pmp, currently has one of the highest liver transplantation rates. A recent data show that HEV IgG seropositivity of non-transplant liver patients in Croatia is 15.8%. To date there are no data regarding the seroprevalence in the national post-transplant cohorts. The aim of this study was to analyse the IgG anti-HEV rate in immunocompromised patients after liver transplantation.

Material/methods: Cross-sectional analysis of IgG anti-HEV prevalence based on 242 serum samples of adult patients after liver transplant (49 viral hepatitis, 121 alcoholic liver disease, 28 autoimmune liver diseases, 43 other liver diseases). Antibody screening was performed using enzyme immunoassays (recomWell IgG anti-HEV, Mikrogen).

Results: IgG anti-HEV antibodies were detected in 24.4% liver recipients, at a mean time from transplant of 6.36 ± 3.25 years. IgG anti-HEV positive were older than IgG anti-HEV negative patients (61.54 ± 7.78 vs 57.82 ± 9.74 , $p < 0.05$). The IgG anti-HEV seropositivity was more prevalent among women than men ($p = 0.011$). Between anti-HEV IgG positive and negative group there were no differences regarding aetiology of liver diseases, types of immunosuppression, time from transplant or

routine laboratory parameters except lymphocytes which were lower in anti-HEV IgG positive group ($1.55 \times 10^9/L$ vs $1.73 \times 10^9/L$, $p=0.048$). In 59 positive samples median IgG anti-HEV titre was 3.597 (1.251-7.200). Patients with higher IgG anti-HEV titre (>3.597) had a significantly higher ALT levels ($53.14 \text{ U/L} \pm 49.26 \text{ U/L}$ vs $31.27 \text{ U/L} \pm 16.95 \text{ U/L}$, $p=0.025$) compared with the lower IgG titre group. ALT levels showed a significant positive correlation with anti-HEV IgG titre ($r 0.345$, $p=0.012$).

Conclusions: Our preliminary data in a cohort of long-term immunosuppressed patients after liver transplantation show a considerable HEV seroprevalence of 24.4%. Keeping in mind that chronic hepatitis E may be an emerging disease of immunosuppressed patients, in the presence of cryptogenic transaminitis of graft dysfunction after liver transplant, HEV antibody screening followed by molecular testing should be routinely considered.