

Seroprevalence and incidence of Hepatitis E virus infection among pregnant women in Anuradhapura District, Sri Lanka: a cohort study

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Introduction and Objectives: Hepatitis E virus (HEV) infection poses health risks during pregnancy, including increased maternal morbidity, mortality and adverse foetal outcomes. Despite its relevance, data on HEV seroprevalence among pregnant women in Sri Lanka is limited, and reports of acute infection in this group are scarce. This study aimed to assess the seroprevalence and incidence of HEV infection among pregnant women in the Anuradhapura District.

Methods: A cohort study was conducted using serum samples from 3,163 pregnant women attending antenatal clinics in the Anuradhapura District, Sri Lanka. Of these, 1,344 were paired samples from the first and second trimesters and 1,819 were first trimester samples only. All serum samples were tested for anti-HEV IgG antibodies by trained laboratory staff using the WANTAI HEV-IgG indirect ELISA assay according to the manufacturer's protocol. Participants who tested positive for anti-HEV IgG in one or both trimesters were further tested for anti-HEV IgM antibodies using the WANTAI HEV-IgM capture ELISA assay. In addition, IgM assay was performed on the first trimester samples, which showed a seroconversion to IgG levels on the respective second trimester samples.

Results: Anti-HEV IgG was detected in 0.1% (n = 2) of both trimesters among the 1,344 paired samples. Four women in the paired sera group showed a seroconversion in anti-HEV IgG, resulting in a cumulative incidence of 0.30%. One woman who was positive in the first trimester tested negative in the second trimester, suggesting a possible decline in antibody levels. Among the 1,819 women with only first trimester samples, 0.9% (n=17) were seropositive for anti-HEV IgG. In total, 21 out of 3,163 women tested seropositive, resulting in an overall anti-HEV IgG seroprevalence of 0.66%. All tested samples for anti-HEV IgM were negative.

Conclusion: The low seroprevalence of anti-HEV IgG antibodies in this cohort suggests limited prior exposure to HEV among pregnant women in the Anuradhapura District. The absence of anti-HEV IgM positivity suggests no evidence of recent or active infection at the time of sampling. However, seroconversion in a small subset point to possible HEV exposure during pregnancy. These findings highlight the need for broader epidemiological studies across Sri Lanka.

Keywords: Hepatitis E, Pregnant women, Sri Lanka

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