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Seroprevalence and Incidence of Hepatitis A virus among Pregnant Women in Anuradhapura District, Sri Lanka: A Cohort Study

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Background: Hepatitis A is commonly considered as a disease associated with inadequate Water, Sanitation, and Hygiene (WASH) practices and is not regarded as a major public health issue in Sri Lanka. However, evidence indicates that transmission remains high. In particular, data on HAV immunity during pregnancy remain scarce, especially in rural provinces.

Objective: To determine the seroprevalence of anti-HAV antibodies and the seroincidence of Hepatitis A among pregnant women in the Anuradhapura District, Sri Lanka.

Methods: This study was conducted using a bio bank of serum samples collected and stored within the Rajarata Pregnancy Cohort (RaPCo), a population-based, prospective maternal cohort established between July and September 2019. Pregnant women were enrolled at <12 weeks' gestation and were followed up at 25-28 weeks' gestation. Venous blood was obtained at both time points. Stored serum samples were analyzed for anti-HAV IgG antibodies using the WANTAI HAV-IgG competitive ELISA, following the manufacturer's protocol and performed by trained laboratory personnel.

Results: The baseline serum samples 1846 were available for participants of which 971 were followed up. Of the baseline samples, 1,789 were positive for anti-HAV IgG, indicating a seroprevalence of 96.9% among pregnant women. Of the 35 baseline negative women, 5 had seroconversion during the follow-up. The median duration of follow up was 129 days, amounting to an incident rate of 11.09/10000 persondays. Of the five seroconversion cases, two were reported from Galenbindunuwewa, while one case each was identified in Rajanganaya, Kekirawa, and Polugaswewa.

Conclusion: The high anti-HAV IgG seroprevalence among pregnant women in Anuradhapura District indicates widespread prior exposure and natural immunity against the virus. The observed incidence rate suggests a concerning level of ongoing HAV transmission during pregnancy, despite the high baseline immunity. Continued surveillance is warranted to detect potential shifts in HAV epidemiology with changes in living standards.

Keywords: Hepatitis A, Pregnant women, Sri Lanka