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Trends in hepatitis E virus seroprevalence, Germany, 1998–2010

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Background: Hepatitis E caused by the Hepatitis E Virus (HEV) genotype 3 is a foodborne zoonosis. It is endemic in most regions of the world. A steep rise in Hepatitis E diagnoses is currently being observed in several European countries. However, whether this is due to an increased awareness and frequency of testing or a real increase of infections and/or clinical disease is debated.

The objective of this study was to measure HEV antibody (anti-HEV IgG) prevalence in two population based samples 12 years apart in order to assess trends in prevalence and infection pressure in Germany. As a secondary objective, seroincidence and seroreversion should be quantified in paired samples.

Material/methods: Samples and questionnaire data from participants of the "Study on Adult Health in Germany" (DEGS1 2008-2011, n=7,089), as well as participants of the "German National Health Interview and Examinations Survey 1997-1999" (GNHIES98, n=5,896), aged 18-79 years were included. Approximately one third of participants of GNHIES98 also participated in DEGS1, constituting a longitudinal component. Anti-HEV IgG prevalence was measured using the recomLine HEV IgG immunoassay (Mikrogen, Germany).

Results: A moderate but statistically significant decline of overall anti-HEV IgG prevalence from 18.6% to 15.3% was found. At both time points, seroprevalence increased with age and peaked in persons born between 1935 and 1959 indicating concurrent age and cohort effects. Over the 12 years, paired samples revealed respective seroconversion and seroreversion rates of 6.2% and 22.6% among seronegative and seropositive individuals, or 5.2 and 2.9 per 1000 inhabitants per year. Based on these results, a total of 417,242 new seroconversions per year was estimated for the German population.

Conclusions: HEV in Germany is neither rare nor emerging. While seroprevalence decreased slightly between 1998 and 2010, the concurrently rising case numbers indicate that we continue to see only the proverbial tip of the iceberg of incident cases of Hepatitis E. Studies on the burden of the disease as well as risk factors and sources of autochthonous infections are urgently needed.