Evidence of intense ongoing endemic transmission of hepatitis C virus in Egypt

Egypt has the highest prevalence of antibodies to hepatitis C virus (HCV) in the world, estimated nationally at 14.7%. An estimated 9.8% are chronically infected. Numerous HCV prevalence studies in Egypt have published various estimates from different Egyptian communities, suggesting that Egypt, relative to the other nations of the world, might be experiencing intense ongoing HCV transmission. More importantly, a new national study provided an opportunity to apply established epidemiologic models to estimate incidence. Validated mathematical models for estimating incidence from age-specific prevalence were used. All previous prevalence studies of HCV in Egypt were reviewed and used to estimate incidence provided that there was sufficient age-specific data required by the models. All reports of anti-HCV antibody prevalence were much higher than any other single national estimate. Age was the strongest and most consistently associated factor to HCV prevalence and HCV RNA positivity. It was not possible to establish a prior reference point for HCV prevalence or incidence to compare with the 2009 incidence estimates. The modeled incidence from the national study and collectively from the modeled incidence from the previous community studies was 6.9/1,000 [95% confidence interval (CI), 5.5–7.4] per person per year and 6.6/1,000 (95% CI, 5.1–7.0) per person per year, respectively. Projected to the age structure of the Egyptian population, more than 500,000 new HCV infections per year were estimated. Iatrogenic transmission is the most likely, underlining exposure to the ongoing transmission. The study demonstrates the urgency to reduce HCV transmission in Egypt.