Protective role of humoral immune responses during an outbreak of hepatitis E in Egypt

Mohamed T. Shataa, Enas A. Daef, Maysaa E. Zakic, Sayed F. Abdelwahab, Naglaa M. Marzuuk, Maha Sobhy, Marwa Rafaat, Liala Abdelbak, Mohamed A. Nafeb, Mohamed Hashem, Samer S. El-Kamary, Michelle D. Shardell, Nabiel N. Mikhail, George

Abstract:

Although the seroprevalence of hepatitis E virus (HEV) is approximately 80% in adult Egyptians living in rural areas, symptomatic HEV-caused acute viral hepatitis (AVH) is sporadic and relatively uncommon. To investigate the dichotomy between HEV infection and clinical AVH, HEV-specific immune responses in patients with symptomatic and asymptomatic HEV infection during a waterborne outbreak in Egypt were examined. Of 235 acute hepatitis patients in Assiut hospitals screened for HEV infection, 42 (17.9%) were acute hepatitis patients confirmed as HEV-caused AVH; 37 (88%) of the 42 patients were residents of rural areas, and 14 (33%) were from one village (Kom El-Mansoura). Another 200 contacts of AVH cases in this village were screened for HEV and 14 (7.0%), all of whom were family members of AVH cases, were asymptomatic HEV IgM-positive. HEV infections in this village peaked during the summer. Asymptomatic HEV seroconverters had significantly higher levels of epitope-specific neutralising (p=0.006) and high avidity (p=0.04) anti-HEV antibodies than the corresponding AVH cases. In conclusion, naturally acquired humoral immune responses appear to protect HEV-exposed subjects from AVH during an HEV outbreak in Egypt.

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