Short Communication

Seroepidemiology of Anti-HEV IgG in Healthy Men Blood Donors in Kerman, 2007-2008

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Hepatitis E is an important public health problem in many developing countries. The disease generally affects young adults. The causative agent of Hepatitis E, Hepatitis E virus (HEV), is a single-stranded positive-sense RNA virus without an envelope (1). HEV is generally transmitted by fecal-oral route. The genomic RNA of HEV is about 7.5 kb with three open reading frames (ORFs). ORF1 is predicted to encode viral nonstructural proteins, ORF2 encodes the putative capsid protein, and ORF3 encodes a cytoskeleton-associated phosphoprotein (2, 3). HEV was originally classified as a calicivirus, but recent data showed that HEV does not share some common important features with caliciviruses. It was recently declassified from the Caliciviridae family and remains unclassified (4).

Iran is a part of developing Asia with high incidence and prevalence of type A hepatitis, therefore it is expected to have incidences of Hepatitis E. Unfortunately, there has been no documented study to explain the statistical characteristics of this infection in the general population. We studied the level of seropositivity of a group of blood donors in a cross-sectional study in Kerman during 2007-2008 (5).

Among the 400 plasma samples analyzed, a total of 31 were found to be positive for anti-HEV IgG, corresponding to a prevalence rate of 7.7%, however, no significant difference was observed (P = 0.45).

No data on type of job activities of the donors were available, but it was interested to know whether some of them had occupations involved in animal contacts. Another possibility is that sanitation may play a more prominent role in urban than rural areas. None of the positive donors had recently traveled to the endemic regions, but they might have traveled outside Kerman long time ago and

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Fig. 1: Frequency distribution of anti HEV seropositivity in association with age in 400 men blood donors.
Age group(years) | Urban area no.pos./no.test. (%) | Rural area no.pos./no.test. (%) |
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20-30 | 3/98 (3%) | 0/37 (0%) |
30-40 | 4/123 (3.2%) | 3/22 (13.6%) |
40-50 | 9/80 (11.8%) | 5/15 (33.3%) |
50-60 | 5/23 (21.7%) | 2/2 (100%) |
Total | 21/324 (6.4%) | 10/76 (13.1%) |

Our method of screening detected anti HEV IgG, which is a routine test to detect HEV infection. No significant difference was observed in seropositivity between males and females. The lowest rate of seropositivity was observed in less than 20-30 years, and a peak level in the 30-40 years of age followed by a decline in the higher ages. Our data correlates to most other studies.

Since the HEV excretion is not usual, transmission rate and prevalence of the infection is low. According to the results of our study we conclude that Kerman is an endemic area of type E hepatitis and we suggest further investigation since there will be higher incidence of the infection in general population particularly in rural areas.

Determination of anti-HEV in healthy blood donors is not routine now. The available kits to detect anti-HEV IgM have some limitations. Although the HEV-specific polymerase chain reaction (PCR) test is sensitive and specific, screening of the blood using PCR would not be cost-effective. In conclusion, seroprevalence of the HEV among blood donors in our study in Kerman is high, but we cannot recommend screening of all blood donors for HEV until more data becomes available and further knowledge about the mode of transmission of HEV becomes available.

References


