

HEV SCREENING FOR BLOOD DONORS (P-203)

H. IKEDA, H. Sakata, K. Matsubayashi, E. Tokushima, S. Tanaka, S. Sato, T. Kato (Sapporo, Japan)

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BACKGROUND

Zoonotic food-borne infection is a major transmission route of HEV in Japan. Recently we reported a transfusion-transmitted hepatitis E case (Ikeda H, et al., *Transfusion* 2005; 45: SP207), where the causative donor was apparently infected by zoonotic food-borne route and remained asymptomatic.

AIMS

1) To prevent transfusion-transmitted HEV infection by screening blood donors for HEV. 2) To clarify natural history of HEV infection.

METHODS

HEV-RNA detection and quantitation was carried out by TaqMan real-time RT-PCR using in vitro transcribed RNA from HEV cDNA template as quantitation standards. HEV genotype was determined by PCR direct sequencing and phylogenetic analysis base on ORF1 sequences. ELISA for anti HEV was carried out with in-house ELISA using recombinant HEV virus-like particles (Li TC, et al., *J Med Virol* 2000;62:327-33.) and/or commercial kit (Cosmic Corporation. Co., Ltd., Japan)

RESULTS

Blood donors were screened for HEV-RNA from Jan'05 to April '06. Of 388,119 donations, 33 males (1/7,120) and 22 females (1/6,962) were HEV-RNA(+). Genotype 3 was predominant (G3 /G4=51/4). Of 55 HEV-RNA(+)-donors, 40 were seronegative at donation and eventually seroconverted. Follow-up studies revealed that no HEV(+)-donor had subjective symptom, although ALT levels went up to 67-333 IU/L in some of them.

HEV-RNAs were detected in 37 days at the longest or undetected in 6 days at the earliest after the donations. Their IgM antiHEV became detectable in 51 days at earliest or lasted more than 237 days after the donations.

Of 55 donations, 7 were used for transfusion; two caused HEV infection in two patients ; two did not cause infection in two patients ; three were unknown because patients died before 30 days after transfusion. Although their infection routes were not very clear, zoonotic food-borne route was likely, because most of them had history of ingesting animal meat derived from internal organs in the past 60 days and such meat was reported to be sometimes contaminated with HEV (Kato M, et al., *Kanzo* 2004; 45:688).

CONCLUSION

HEV-RNA was detected in our blood donors at the rate of about 1/7,000. HEV carriers were mostly asymptomatic and seronegative, although high ALT level was observed in some. HEV viremia was detected in 37 days at the longest after donation. Of 7 patients who were transfused with HEV positive blood, at least two were infected (one symptomatic and the other asymptomatic). Although their infection route was not clear, zoonotic food borne infection was suggestive.