

Hepatitis B virus infection status in the peripheral blood mononuclear cells of newborns of hepatitis B surface antigen positive mothers

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Author contributions: All authors contributed equally to the work.

Supported by The National Natural Science Foundation of China, No. 39370611.

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Received: August 11, 1999
Revised: February 10, 2000
Accepted: July 10, 2000
Published online: September 15, 2000

Abstract

AIM: To study the hepatitis B virus (HBV) status in peripheral blood mononuclear cells (PBMC) and its relationship with serum HBV infection in newborns of hepatitis B surface antigen (HBsAg) positive mothers.

METHODS: Blood specimens were collected by femoral puncture from newborns of HBsAg positive mothers within 24 h after birth between February, 1997 and May, 1998. All sera were examined for HBV DNA and HBsAg by nested polymerase chain reaction (nPCR) and enzyme linked immunosorbent assay (ELISA). PBMC were separated from above blood specimen of newborns. Fifty five PBMC smear of newborns were obtained whose sera were HBV DNA

positive and 38 PBMC smear were randomly selected from newborns whose sera were HBV DNA negative. These Ninety-three smear of newborns PBMC at birth were detected for HBV DNA by *in situ*-polymerase chain reaction (IS PCR) and in situ hybridization (ISH) using digoxin labelled HBV DNA probe.

RESULTS: Twenty-seven (49.09%) out of 55 HBV DNA positive newborns sera had HBV DNA in PBMC and 4 (10.53%) out of 38 HBV DNA negative newborns sera were detected for HBV DNA in their PBMC by ISH. Sixty-two HBV DNA negative newborns PBMC by ISH were examined for HBV DNA by IS PCR. Ten (35.71%) out of 28 HBV DNA positive newborns sera had HBV DNA in their PBMC. Two (5.88%) out of 34 HBV DNA negative newborns sera were found HBV DNA in their PBMC. Total positive rates of PBMC HBV DNA (by ISH and/or IS PCR) were 67.27% (37/55) in those newborns with HBV DNA positive sera and 15.79% (6/38) in those newborns with HBV DNA negative sera.

CONCLUSION: HBV DNA in PBMC were found in most of newborns who had HBV DNA positive sera. But HBV DNA in PBMC also were positive in some of newborns who were negative for HBV DNA in their sera at birth. It suggests that intrauterine HBV infection may be demonstrated only by HBV infection in their PBMC and should be served as diagnosis index for intrauterine HBV infection. HBV infection in PBMC may play some role in HBV intrauterine infection and its persistence, but it needs to study furthermore.

Key words: Hepatitis B virus; HBsAg; Newborns

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Wang SP, Xu DZ, Yan YP, Shi MY, Li RL, Zhang JX, Bai GZ, Ma JX. Hepatitis B virus infection status in the peripheral blood mononuclear cells of newborns of hepatitis B surface antigen positive mothers. *World J Gastroenterol* 2000; 6(Suppl3): 98 Available from: URL: <http://www.wjgnet.com/1007-9327/full/v6/iSuppl3/98.htm> DOI: <http://dx.doi.org/10.3748/wjg.v6.iSuppl3.98>

E- Editor: Zhang FF



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