

SEROEPIDEMIOLOGICAL AND MOLECULAR SURVEY OF HEPATITIS B VIRUS INFECTION IN MANICURISTS AND PEDICURISTS IN THE CENTRAL BRAZIL

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BACKGROUND

The hepatitis B virus (HBV) is efficiently transmissible by percutaneous exposure, but the contribution of some activities in the HBV transmission is still unknown. In Brazil, manicurists/pedicurists remove the nail cuticles constituting a blood contact risk, although it is not clear the impact of this activity in the transmissible diseases. The aim of this study was to investigate the serological and molecular prevalence of HBV infection in 514 manicurists/pedicurists and identify the risk factors related with this infection.



METHODS

In this cross-sectional study, 514 manicurists/pedicurists who work in Campo Grande - MS answered a questionnaire after signing the written informed consent. A blood sample was obtained to detect the serologic markers of the HBV infection. All serum samples were tested for HBsAg, anti-HBs and anti-HBc. The HBsAg positive samples were submitted to anti-HBc IgM, HBeAg and anti-HBe detection by enzyme immunoassay. The samples were also tested for hepatitis C virus (HCV) and human immunodeficiency virus (HIV). The anti-HBc positive samples were tested to the HBV-DNA by Polymerase chain reaction (PCR) to investigate occult hepatitis B. All HBV-DNA positive samples were submitted to genotypes and subgenotypes identification by restriction fragment length polymorphism (RFLP) analysis and they were confirmed by nucleotide sequencing. The HBV-DNA positive samples were also quantified by TaqMan Real Time PCR.



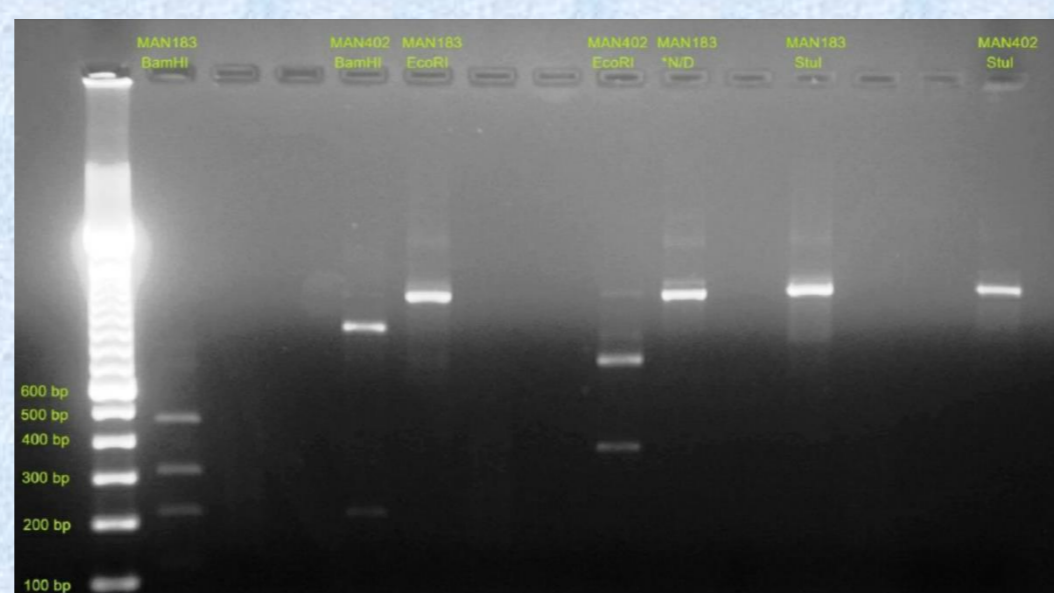
RESULTS

The overall HBV prevalence (anti-HBc) was 5.6% (29/514) and of HBsAg was 0.4% (2/514). The HBsAg positive samples were reagents to anti-HBc and anti-HBe. No manicurist/pedicurist was infected by HCV or HIV. One case of occult hepatitis B was found. The genotypes A1 and F2 were identified in two HBsAg-positive samples. The statistical analysis revealed association of the HBV infection with low level of education, to work in the central region of the city, and not being born in the State of Mato Grosso do Sul. The vaccination situation showed that 50.4% (259/514) of the professionals were susceptible to HBV infection and the vaccinal immunity marker (anti-HBs isolated) were present in only 44% (226/514).

Table I - Adjusted analysis of risk factors independently associated with hepatitis B virus infection in manicurists/pedicurists, Campo Grande - MS (n=288)

Variable	Adjusted OR ^a (CI 95%) ^b	p
Age (years)		
≤33	1.00	
>33	1.47 (0.58–3.69)	0.42
Education		
≥ high school	1.00	
≤ elementary school	2.72 (1.14–6.47)	0.02
Place of birth		
State of Mato Grosso do Sul	1.00	
Others States/Countries	4.37 (1.84–10.35)	<0.01
Workplace		
Other regions	1.00	
Central region	3.70 (1.53–8.94)	<0.01
Acupuncture history		
No	1.00	
Yes	1.96 (0.58–6.68)	0.28
Family history of hepatitis		
No	1.00	
Yes	2.09 (0.81–5.34)	0.12

Figure I - PCR products of the pre-S/S region digested by restriction endonucleases BamHI, EcoRI and StuI (RFLP).



*N/D - Undigested

CONCLUSIONS

The prevalence of HBV found in our study is low and is like other studies conducted in the same region and is similar to other studies conducted with the same professionals in others Brazilian states^{1,2,3,4}. Furthermore, occult hepatitis B was found in only one professional which reinforces a low prevalence. The absence of HCV and HIV infection corroborates with the hypothesis that this professional activity cannot be considered a risk for blood-borne diseases. On the other hand, our study shows that half of these professionals were susceptible to HBV infections because they had never received the vaccine. The molecular analysis of HBsAg-positive samples found two genotypes already detected in Brazil and the viral load did not represent a significant risk for developing cirrhosis and hepatocellular carcinoma⁵. The low prevalence of hepatitis B and the absence of risks factors related to this professional activity suggest that the infection risk is no greater than general population.

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CONFLICTS OF INTEREST

We have no conflict of interest to declare.

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Financial Support:

