



Letter to Editor/Carta ao Editor

Accelerated vaccination against HBV infection is an important strategy for the control of HBV infection in prisons

Vacinação rápida contra a infecção por VHB é uma estratégia importante para o controle da infecção pelo VHB em presídios

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Dear Editor:

I read with interest the article by Stief et al. published in your journal recently¹. It showed us that hepatitis B virus (HBV) infection remains a significant problem in prisons, and it was related with other published studies^{2,3}. The finding on higher prevalence of HBV infection in the male gender and in prisoners with positive history of intravenous drug use and STD demonstrated a new strategy for the control of HBV infection in prisons. Low vaccination coverage and the high number of injecting drug users (IDUs) suggest that most of them are susceptible to this infection.

Prisoners and IDUs are at constant risk of HBV infection, and the classic 6-month HBV vaccination might not provide immunization rapidly enough^{4,5}. Compared with classic HBV vaccination regimen, an accelerated 0, 1, 4, and 8 weeks vaccination schedule can achieve early seroprotection more rapidly, provides clinically sufficient seroprotection with higher compliance in prisoners, and can be suggested in situations that rapid immunization against HBV infection is warranted⁴. I suggest the selection of higher-risk groups in prisons, including males with history of IDUs and STD, to start the accelerated vaccination against HBV infection early. This will be extremely useful to ensure immunity against HBV infection soon.

I would like to inform those identified by Stief et al. as having high risk of contracting HBV infection, particularly those in prisons and of old age, that being infected would be related to more duration of staying in high-risk place (prison) and more exposure with the risk factors. And finally, I would like to ask about hepatitis C virus (HCV) and HIV infections, which are more common in IDU groups⁶ as stated in the literature; the authors did not present this in their study.

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Article/Artigo

Seroprevalence of hepatitis B virus infection and associated factors among prison inmates in State of Mato Grosso do Sul, Brazil

Seroprevalência e fatores associados à infecção pelo vírus da hepatite B em população encarcerada no Estado do Mato Grosso do Sul, Brasil

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ABSTRACT

Introduction: This study aimed to estimate the prevalence of HBV infection and associated factors among prison inmates in Campo Grande, MS, Mato Grosso do Sul. A total of 408 individuals were interviewed regarding socio-demographic characteristics, associated factors and HBV vaccination using a standardized questionnaire. Blood samples were collected from all participants and serological markers for HBV were detected by enzyme-linked immunosorbent assay (Hepatitis B surface antigen (HBsAg) and/or antibodies against hepatitis B core antigen (anti-HBc)) positive samples were tested for HBV DNA by polymerase chain reaction. **Results:** The overall prevalence of HBV infection was 17.9% (95%CI: 14.4-22.0). The HBsAg carrier rate was 0.5% (56 (13.7%) individuals had been infected and developed natural immunity and 15 (3.7%) were positive for anti-HBc only. Ninety-eight (24%) prisoners had only anti-HBc, suggesting that they had low vaccine coverage. Anticore HBV infection rate (IC) was verified among anti-HBc positive individuals. Multivariate analysis of associated factors showed that age > 30 years-old, low schooling level and illicit drug use are significantly associated with HBV infection. **Conclusions:** Analysis of the data showed HBV infection prevalence similar or slightly lower than that reported in other of Brazilian prisons. Independent predictors of HBV infection in this population include older age, low schooling level and illicit drug use. **Key-words:** Hepatitis B. Prisoners. Prevalence. Associated factors.

INTRODUCTION

Despite the availability of effective vaccines, hepatitis B virus (HBV) infection remains a very important public health problem. Of the 2 billion people who have been infected with HBV, it is estimated that there are still more than 350 million chronic carriers worldwide¹.

Brazil is considered a country with intermediate prevalence, within which distinct geographical areas may present high or low incidence^{2,3}.

Studies have reported that the prevalence of HBV infection is higher in the prison population than in the general population⁴. International studies show that the overall HBV infection ranges from 1.8% to 62%^{5,6} among adult inmates. Studies conducted with prisoners in Brazil determined HBV seroprevalence ranging from 11.1% to 26.4%^{7,8,9,10}.

This population is considered to be at high risk of HBV infection due to the prison lifestyle, including illicit drug use, unsafe sex with multiple sexual partners, homosexuality and tattooing. In addition, the prison inmates are characterized by pervasive social health problems, illegal behavior and limited educational opportunities¹¹. Due to the fact that prisoners suffer from lack of appropriate health care, the penal systems could serve as reservoirs for HBV. In addition, HBV infected inmates may also transmit this virus to the general population¹².

Although knowledge regarding the epidemiological status of HBV infection among the prison population is important to identify specific risk factors in order to implement appropriate prevention measures¹³, few studies in this population have been conducted in Brazil^{14,15,16}. Thus, the aim of this study was to investigate the prevalence and associated factors for HBV infection among prison inmates in the State of Mato Grosso do Sul.

RESUMO

Introdução: O presente estudo teve como objetivo investigar a prevalência da infecção pelo HBV e os fatores associados a esta infecção em população encarcerada de Campo Grande, MS, Mato Grosso do Sul. Quatrocentos e oito encarcerados, provenientes da população encarcerada do Instituto Penal de Campo Grande, Presídio de Segurança Máxima e Presídio Feminino Inês Lima Zorzi, foram entrevistados sobre dados sociodemográficos e fatores associados à infecção pelo HBV. Amostras de sangue coletadas foram analisadas para detecção dos marcadores HBsAg, anti-HBc e anti-HBe, total por ensaio imunoenzimático. O HBV-DNA foi detectado pela reação em cadeia da polimerase nos amostras HBsAg e anti-HBe, respectivamente. **Resultados:** A prevalência global para infecção pelo HBV foi de 17,9% (IC 95% de 14,4-22,0). 13,7% (56/408) para o anti-HBc, total associado ao anti-HBc em 15 (3,7%) indivíduos foi detectada a presença de anti-HBc isolado. HBsAg foi encontrada em 0,5% (2/408) dos indivíduos estudados, evidenciando uma baixa prevalência de casos crônicos. Em 24% (98/408) dos indivíduos, verificou-se positividade para anti-HBc isolado ou associado a anti-HBc, sugerindo baixa cobertura vacinal ao HBV. Após análise multivariada, ter idade maior que 30 anos, baixo nível de escolaridade e uso de drogas ilícitas permaneceram associados significativamente à infecção pelo HBV. **Conclusões:** A prevalência da infecção pelo HBV, encontrada foi similar à reportada em outros estudos conduzidos em populações encarceradas do Brasil. Os fatores de risco associados a esta infecção foram: aumento da idade, baixo nível de escolaridade e uso de drogas ilícitas. **Palavras-chaves:** Hepatite B. Encarcerados. Prevalência. Fatores associados.

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Authors' reply regarding the comments about article *Seroprevalence of hepatitis B virus infection and associated factors among prison inmates in State of Mato Grosso do Sul, Brazil*

Resposta dos autores quanto aos comentários feitos sobre o artigo *Seroprevalência e fatores associados à infecção pelo vírus da hepatite B em população encarcerada no Estado do Mato Grosso do Sul, Brasil*

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We are very pleased to present our answers to the comments made by Professor Seyed Moayed Alavian in relation to our work *Seroprevalence of hepatitis B virus infection and associated factors among prison inmates in State of Mato Grosso do Sul, Brazil*.

Before publication, we had the opportunity to present the paper in a seminar (*Encontro Estadual de Vigilância em Saúde*) in Campo Grande-MS, in November 24, 2009, promoted by the State Health Office.

Concerning the vaccination against the hepatitis B virus in the population exposed to the risk of becoming infected, the findings were sent to the State Health Office (State Program of STD/AIDS and viral hepatitis) of Mato Grosso do Sul State. The high number of susceptible individuals (58%) was enhanced so that HBV vaccination could be initiated in this population, with the objective of preventing and controlling the hepatitis B virus infection in and out of the prisons.

The history of drug use is paramount when investigating the possibility of acquiring diseases transmitted sexually and parenterally, such as HBV infection¹. Drugs are prohibited in prisons; therefore, their use is considered a crime in Brazil, which causes many inmates not to report the use of injecting drugs. The present study was given continuity by selecting more samples, with a total sample size of 443 men and 243 women. The overall seroprevalence of HCV infection was 4.8% (95% CI: 3.4% to 6.8%), and the coinfection of HIV and HCV was 33.3%². After bivariate and multivariate analyses, injecting drug use was found significantly associated with HCV² and HIV³ infections.

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