

HIGH LEVEL OF EXPOSURE TO HEPATITIS B VIRUS INFECTION AMONG RECYCLABLE WASTE COLLECTORS IN CENTRAL BRAZIL

Sabrina Moreira dos Santos Weis, Sonia Maria Fernandes Fitts, Lívia Stefânia Alves Lima Guedes; Larissa Melo Bandeira, Ana Rita Coimbra Motta-Castro

BACKGROUND

Recyclable waste collectors are at high risk to various infection due to their behavioral, environmental and occupational risks. This study aimed to evaluate the epidemiological features of hepatitis B virus (HBV) infection and occult hepatitis B virus infection (OBI) among recyclable waste collectors. We also investigated the factors associated with immune response to HBV vaccine and prevalence of hepatitis A and C virus (HAV and HCV) infections.

METHODS

This cross-sectional study was conducted between 2014 and 2016 involving 278 recyclable waste collectors recruited from all six recyclable cooperatives and from dumping ground in Campo Grande, Mato Grosso do Sul, Brazil. Data on sociodemographic characteristics and risk factors were obtained by means of a standardized questionnaire. Blood samples were collected from all participants and serological markers for HBV and HCV were determined by enzyme linked immunosorbent assay (ELISA). HBsAg positive and anti-HBc positive samples were submitted to HBV DNA detection by semi-nested Polymerase Chain Reaction (PCR).



RESULTS

Table 1 - Seroprevalence of hepatitis B virus serological markers among 278 recyclable waste collectors in Central Brazil, 2014 – 2016

Markers	N	%	95% CI ¹
Infected			
HBsAg/anti-HBc	01	0.4	0.1 – 0.6
Anti-HBc only	05	1.8	1.3 – 2.3
Total anti-HBc/anti-HBs	22	7.9	4.7 – 11.1
Not susceptible, possibly vaccinated	73	26.3	21.1 – 31.4
Not exposed, susceptible	177	63.7	58.0 – 69.3

¹ Confidence Interval

The mean age was 33 (SD ± 12.03) years, 50.4% of the participants were female and 60.1% were from the dumping ground. The prevalence of HBV infection was 10.1% (95% CI: 6.5 – 13.6)(Table 1). Positivity of HBsAg was detected in 0.4% (1/278), confirmed by PCR. After multivariate analysis, age ≥45 years, history of tattoos, surgery and homosexual contact were independently associated with HBV infection. Most of the studied population (63.7%) was considered susceptible to HBV infection and reflect social issues (Figures 1, 2). Only 26.3% (73/278; 95% CI: 21.1 – 31.4) of the participants were positive for isolated anti-HBs, suggesting that they had been vaccinated against HBV. Age under 26 years, sharing personal sharp objects and knowledge of HBV transmission were associated with the immune response to HBV vaccine. OBI was not found in any HBsAg-negative/anti-HBc-positive samples (0/27). Anti-HCV was found in two (0,7%) and anti-HAV in 277 (99,6%) participants.

Figure 1. HBV serological markers and age (years) among recyclable waste collectors (n = 278) in Central Brazil, 2014 - 2016

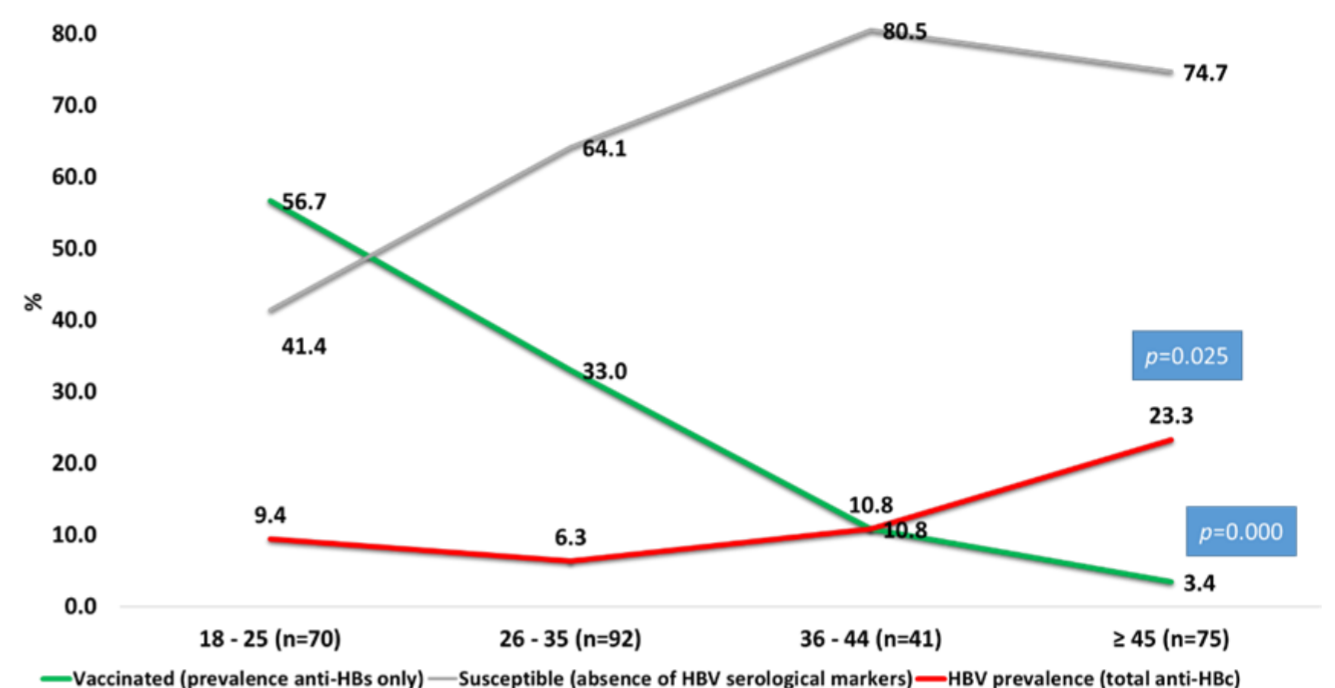
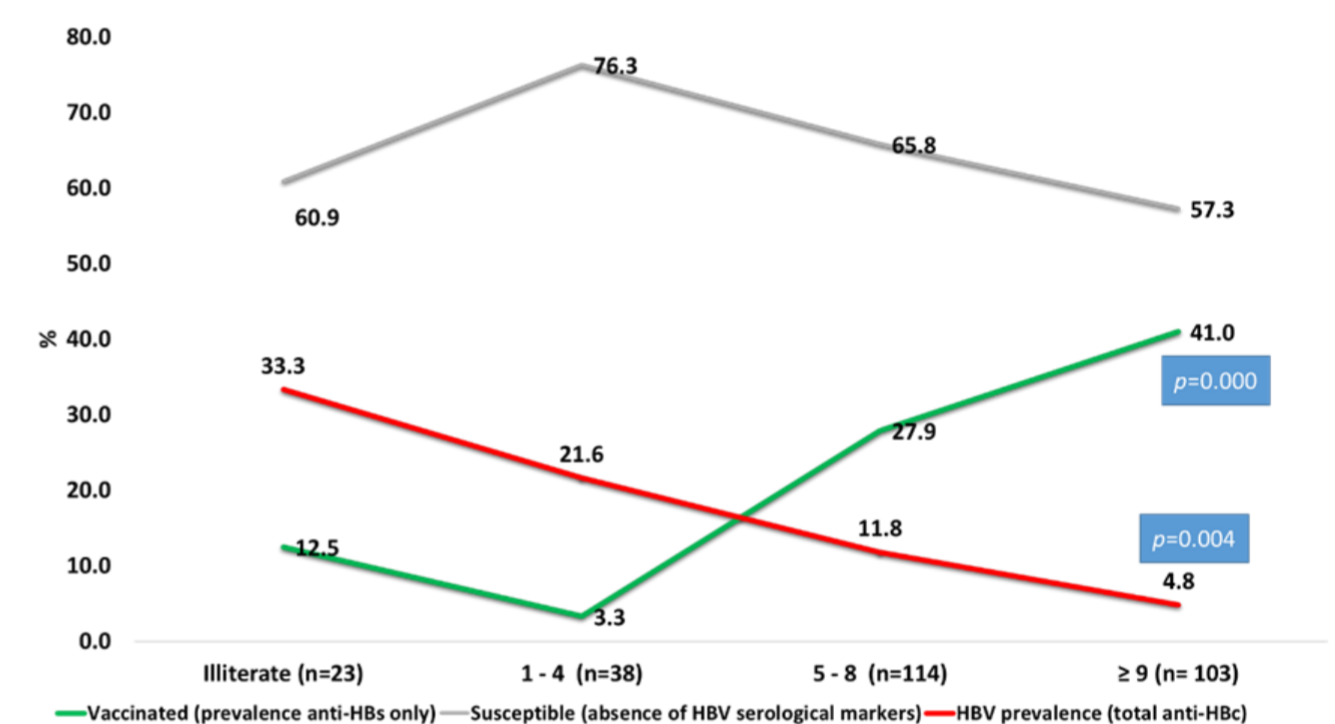


Figure 2. HBV serological markers and educational level (years) among recyclable waste collectors (n = 278) in Central Brasil, 2014 - 2016



CONCLUSIONS

These results highlight that recyclable waste collectors are at high risk for hepatitis A and B infections. Preventives measures are necessary to control these diseases among this population, such as hepatitis B vaccination, regardless of region-specific low HBV endemicity.

REFERENCES

- Pereira LMMB, Martelli CMT, Merchán-Hamann E, et al. Population-based multicentric survey of hepatitis B infection and risk factor differences among three regions in Brazil. *Am J Trop Med Hyg.* 2009 Aug;81(2):240–247.
- Souto FJD. Distribution of hepatitis B infection in Brazil: the epidemiological situation at the beginning of the 21 st century. *Rev Soc Bras Med Trop.* 2016 Feb;49(1):11–23.

CONFLICTS OF INTEREST

The author(s) declare(s) that there is no conflict of interest regarding the publication of this poster.

Contact Information

Sabrina Moreira dos Santos Weis
 TEL NO +55 67 9 9218-1318
 EMAIL sabrinaweistorres@icloud.com