

# CASE-CONTROL STUDY TO IDENTIFY RISK FEATURES ASSOCIATED TO ANTI-HCV SEROLOGY REAGENT IN PRISONERS IN PRISONS IN THE STATE OF PARANÁ, BRAZIL

**Authors:** Marques, Tania Maria Pazin<sup>1</sup>; Ferreto, Lirane Elize Defante<sup>1,2</sup>; Follador, Franciele Ani C<sup>1,2</sup>; Vieira, Ana Paula<sup>1,2</sup>; Yamada, Roberto Shigueyasu<sup>1</sup>; Lucio, Leia Carolina<sup>1</sup>; Titon, Joana Perotta<sup>3</sup>; Torres, Renata Himovski<sup>1</sup>; Amaral, Greicy Cezar do<sup>5</sup>; Coelho, Harnoldo Colares<sup>6</sup>.

**Institutions:** Postgraduate program in applied health sciences West Paraná State University Francisco Beltrão Brazil<sup>1</sup>; Medicine and Postgraduate program in applied health West Paraná State University of Francisco Beltrão Brazil<sup>2</sup>; Medicine West Paraná State University of Francisco Beltrão Brazil<sup>3</sup>; Security and Penitentiary Administration of Paraná Department Penitentiary of Paraná Curitiba Brazil<sup>4</sup>; Epidemiology State Department of Health Maringá Brazil<sup>5</sup>; Clinical, toxicological and bromatological University of São Paulo Ribeirão Preto Brazil<sup>6</sup>.

**Background:** The prison system in Paraná, Brazil presents serious problems related to the increasing the number of prisoners<sup>1</sup> and becomes more intense in the control of the hepatitis C virus (HCV) due to the fact that the incarcerated population is considered a high risk group for contagious diseases because the favorable conditions found in prison for spreading these morbidities<sup>2,3</sup>. The objective of this study was to identify features associated with hepatitis C infection among male prisoners in the prison system (correctional institutions) of Paraná, Brazil.

**Materials and methods:** This is a case-control study (27 cases and 54 controls) with men arrested in eleven penitentiaries in Paraná, Brazil, where the information was obtained through the application of a questionnaire in a cross-sectional epidemiological survey for anti-HCV infection in the period from May 2015 to December 2016. Eligible men were recruited after the positive result for Anti-HCV. The selection of the cases and controls considered the result of the serology by an enzyme-linked immunosorbent assay, following the manufacturer's instructions, matched by age, location of the penitentiary and time in prison. Odds ratio (OR) and 95% confidence interval were estimated using binary logistic regression analysis to identify the predicting factors of the variable to be explained.

**Results:** The participants' mean age was 39 years, and the prevalence was predominantly among individuals over 30 years of age. The logistic regression analysis showed that the main significant risk factor for the acquisition of hepatitis C virus infection was the use of injectable drugs (odds ratio = 4.00; 95% confidence interval, 1.41-11.35;  $p < 0.001$ ).

**Table 1 – Factors associated with hepatitis C in men arrested in the penitentiary system in Paraná**

	OR <sub>br</sub> (IC 95%)	p
<b>Number of times in the prison system</b>		
Up to 2 times	1	
More than 2 times	2.39 (0.78 – 7.32)	0.128
<b>Illicit drugs use</b>		
Yes	4.00 (1.06 – 15.08)	0.041
No	1	
<b>Injecting drug use*</b>		
Yes	4.00 (1.41 – 11.35)	<0.001
No	1	
<b>Homosexual relation</b>		
Yes	3.86 (0.85 – 17.60)	0.081
No	1	

Note: \* Main variable in the final model.

**Conclusions:** This is the first case-control study reported with male prisoners in the closed prison system of Paraná, Brazil. This study provides evidence that HCV infection is associated with drug use by this population. This information is pivotal for tailoring prevention programs and guiding specific socioeducational measures that aim to reduce or prevent HCV transmission within the prison setting.

**Acknowledgments:** To the Ministry of Health of Brazil for research funding.

#### References:

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