

# HIGH PREVALENCE OF HEPATITIS E VIRUS INFECTION AMONG PERSONS WHO USE CRACK FROM MIDWEST REGION OF BRAZIL

Vivianne de Oliveira Landgraf de Castro<sup>1</sup>, Alexandra Tejada-Strop<sup>3</sup>, Sandra Maria do Valle Leone de Oliveira<sup>1</sup>  
Saleem Kamili<sup>3</sup>, Ana Rita Coimbra Motta de Castro<sup>1,2</sup>

<sup>1</sup>Federal University of Mato Grosso do Sul, Campo Grande, Mato Grosso do Sul, Brazil

<sup>2</sup>Oswaldo Cruz Foundation, Campo Grande, Mato Grosso do Sul, Brazil

<sup>3</sup>Division of Viral Hepatitis, Centers for Disease Control and Prevention, Atlanta, Georgia, USA

## BACKGROUND

Hepatitis E virus (HEV) infection is an enterically transmitted disease with worldwide distribution. HEV infection is not routinely investigated in Brazil and therefore data on its incidence and prevalence are scarce. Nevertheless, this region is considered as moderately endemic for HEV and a few reports have demonstrated the presence of anti-HEV IgG antibodies in some parts of the country. In Brazil, crack use has become a prevalent street drug use phenomenon. Most of users of crack live in situations of extreme poverty and housing instability. During the use of the drug, they are often subjected to long outdoor living, frequently under poor sanitary and hygiene conditions, and this may predispose them to various infections including HEV. Thus, this study aimed to determine the prevalence of HEV infection among persons from Midwest region of Brazil who use crack.

## METHODS

Between November 2013 and July 2015, 698 users of crack were recruited from drug use treatment centers and the “drug scene” (streets). Participants were recruited from three cities of Midwest region of Brazil; Campo Grande, capital of Mato Grosso do Sul state; Corumbá and Ponta Porã, borders cities of Bolivia and Paraguay, respectively. Data regarding demographic characteristics and risk behavior were obtained through interviews with the participants. Blood sample was collected and sera were tested by commercially available enzyme immunoassay (EIA) for the presence of IgM and IgG anti-HEV (Wantai HEV IgM and IgG, Beijing Wantai Biological Pharmacy Enterprise Co, Ltd, Beijing, China). Anti-HEV IgM positive samples were tested for HEV RNA by real-time RT-PCR.

## RESULTS

Study participants had mean age of 32 ± 9.5 years, and were primarily male (84.7%), non-Caucasian (68.2%), single (79.1%), residents in Campo Grande-MS (74.9%), and had received eight or fewer years of formal education (67.9%). Fifty percent had reported a monthly income of less than US \$200 and 60.1% reported having a history of incarceration in their lifetime. Of the 698 serum samples, 99 (14.2%) (95%CI 11.8% - 17.0%) were positive for anti-HEV IgG. Two samples were positive for anti-HEV IgM only but both were negative for HEV RNA. The risk factors independently associated with anti-HEV positivity were increasing age and being unmarried.

Table 1. Sociodemographic characteristics among 698 crack users in Mato Grosso do Sul,

Characteristics	N (%)
Male	593 (84.7)
Age (26-35 years)	273 (39.0)
Non-Caucasian	477 (68.2)
Income <\$200	350 (50.0)
Single	553 (79.1)
Living in Campo Grande	523 (74.9)
Low education (<8 years)	474 (67.9)
History of incarceration	421 (60.1)

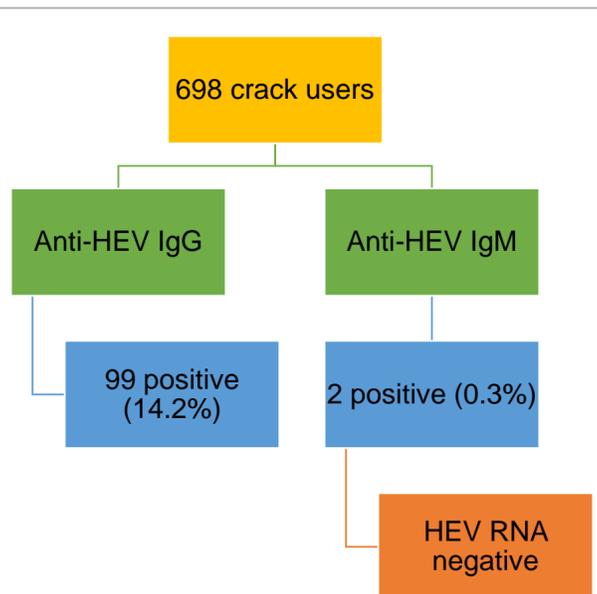


Figure 1. Algorithm for testing the crack users samples.



Figure 2. Crack user at the use scene.

## CONCLUSIONS

Our study demonstrates a high prevalence of HEV infection among persons who use crack in Brazil and that hepatitis E is likely underdiagnosed in this subpopulation.

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## CONFLICTS OF INTEREST

The above authors declare that they do not have any potential conflict of interest in this study.

### Contact Information

NAME: Vivianne de Oliveira Landgraf de Castro

TEL NO: +55 67 992010963

EMAIL: vikalndgraf@hotmail.com

