

## RESEARCH NOTE

## Anti-HCV Prevalence and Risk Factors Analysis in Pregnant Women in Central Brazil

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Hepatitis C virus is responsible for the majority of cases of post-transfusion hepatitis and community-acquired non-A, non-B hepatitis in many countries (G Kuo et al. 1989 *Science* 244: 362-364, MJ Alter et al. 1992 *N Eng J Med* 327: 1899-1905). Data concerning anti-HCV prevalence in Brazil are still rare (BOM Vanderborcht et al. 1993 *Vox Sang* 65: 122-125). A recent study in 2,250 male blood donors from Goiânia, Central Brazil, revealed an anti-HCV prevalence of 1.4%, after confirmation by line immunoassay (Inno-LIA HCV Ab II, Innogenetics, Belgium) (RMB Martins, unpublished data).

This study was undertaken to determine the anti-HCV prevalence in pregnant women in Central Brazil and to study possible risk factors associated with seropositivity. Samples from 1,273 pregnant women averaging 25 years of age (range: 12-58 years), were collected at the Child-Maternal Hospital in Goiânia from July 1990 to December 1992. Data concerning the possible HCV parenteral infection route and sexual risk behavior was obtained by means of a questionnaire. Sera were stored at -20°C until tested. For screening purposes, a second-generation ELISA was used, which included core, NS3 and NS5 recombinant antigens of HCV (CFT Yoshida et al. 1993 *Rev Inst Med trop S Paulo* 35: 315-321). Positive sera were retested for confirmation using two assays: Inno-LIA II (NS4, NS5 and core antigens) and Inno-LIA III (core, E2/NS1, NS3, NS4 and NS5 antigens; Innogenetics). The chi-square test with Yates' correction was used for statistical analysis.

Twenty two (1.7%) sera reacted positively in the screening assay; twelve (0.9%) were con-

firmed positive by Inno-LIA II and III tests. Antibodies against core, E2/NS1, NS3, NS4, and NS5 antigens of HCV were detected respectively in 91.6%, 41.6%, 75.5%, 58.3%, and 41.6% of the positive samples. All results obtained with the Inno-LIA II were confirmed by Inno-LIA III. Anti-HCV prevalence rose with increasing age among pregnant women who were less than 21 years old (0.2%) and in those who were 21-30 years old (1.2%) ( $p < 0.05$ ), and then decreased in older women ( $p > 0.05$ ). Among all risk factors studied, previous blood transfusion ( $p < 0.001$ ), intravenous drug use ( $p < 0.001$ ) and tattoos ( $p < 0.01$ ) were statistically associated with seropositivity in 1,243 pregnant women. Two women who were anti-HCV positive did not answer the questionnaire (Table).

Using second and third generation tests, the anti-HCV prevalence is 0.9% in Central Brazilian

TABLE

Prevalence of anti-HCV by risk factors for HCV infection in pregnant women, Central Brazil

Risk factors (frequency %)	Anti-HCV % (No. pos./No. tested)	
	Factor present	Factor absent
Blood transfusion (9.9)	4.0 (5/123)	0.4 (5/1120) <sup>a</sup>
IV Drug use (1.6)	28.5 (2/7)	1.9 (8/420) <sup>a,c</sup>
Tattoo (4.9)	4.9 (3/61)	0.6 (7/1182) <sup>b</sup>
Household contact (10.1)	0.8 (1/126)	0.8 (9/1117)
Multiple partners (9.2)	0.8 (1/115)	0.8 (9/1128)
STD (4.1)	1.9 (1/51)	0.7 (9/1192)

<sup>a</sup>:  $p < 0.001$ ; <sup>b</sup>:  $p < 0.01$

<sup>c</sup>: factor correctly answered in 427 interviews

STD: sexually transmitted diseases

pregnant women and it is similar to those found in French (F Roudot-Thoraval et al. 1992 *Gastroenterol Clin Biol* 16: 255-259) and in healthy pregnant Taiwanese women (HH Lin et al. 1993 *Vox Sang* 65: 117-121). These results show that the anti-HCV prevalence rate in pregnant women is slightly lower but not statistically different from that found in male blood donors (1.4%), and that parenteral transmission seems to be the major route of HCV infection in Central Brazil. Additional studies of babies born to infected mothers should be carried to evaluate the HCV vertical transmission in Brazil.

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