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PREVALENCE OF ANTIBODIES TO HEPATITIS C VIRUS
IN PREGNANT WOMEN IN EGYPT

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Prevalence of Antibodies to Hepatitis C Virus in Pregnant Women in Egypt

Colleagues—Hepatitis C virus (HCV) infection has been shown to be responsible for 90% of posttransfusion hepatitis [1]. It is estimated that 50% of those infected with HCV will develop chronic hepatitis, of whom 20% will develop chronic active hepatitis, cirrhosis, hepatocellular carcinoma, or a combination [2]. The prevalence of antibodies to HCV (anti-HCV) in blood donors in the United States and Europe is low (0.047%–1.2%) [3, 4]. A similar study of Egyptian blood donors at Riyadh, Saudi Arabia, using first-generation ELISA and polymerase chain reaction has revealed an HCV infection prevalence of 19.2% and 13.6%, respectively, the highest in comparison with subjects from other countries in the region [5]. Using a second-generation ELISA and second-generation RIBA (Ortho Diagnostic Systems, Raritan, NJ), a recent study of the prevalence of anti-HCV among 2167 Egyptian university student blood donors revealed a prevalence of 9.6% [6].

Although parenteral transmission has been described as the major route of HCV transmission, HCV can also be transmitted vertically from infected mothers to their newborns [7]. To assess whether vertical transmission could potentially contribute to the high prevalence of HCV in Egypt, we determined the prevalence of anti-HCV in pregnant women. We enrolled 1536 pregnant mothers (age range, 17–45 years; mean, 27) attending an antenatal outpatient clinic. Sera collected during the second and third trimesters of pregnancy were tested for anti-HCV using a second-generation ELISA (Abbott Laboratories, Abbott Park, IL), and positive ELISA results were confirmed by second-generation RIBA. These two tests detect anti-HCV to structural and nonstructural proteins of HCV using C-100-3, 5-1-1, C33c, and C22-3 recombinant antigens.

There were 101 serum samples (6.5%) repeatedly positive (three times) by ELISA. RIBA confirmed 67 samples (66.3%) as positive, 21 (20.2%) were indeterminate, and 13 (12.8%) were negative. The 13 RIBA-negative samples were only weakly reactive by ELISA (sample optical density/cutoff optical density was <1.8). The 21 RIBA-indeterminate results were from 16 samples positive for C22-3 antigen only, 3 samples reactive to C33c only, and 2 samples reactive to C-100-3 only. Overall RIBA-confirmed anti-HCV were detected in 4.3% of normal healthy pregnant women in this study of Egyptian women. This prevalence of anti-HCV is higher than was reported from France, where anti-HCV prevalence was 0.9% in pregnant women [8]. In summary, we found that HCV seroprevalence in pregnant women in Egypt is high. Additional studies of babies born to infected mothers should be done to assess to what extent vertical transmission contributes to the high prevalence of HCV infection in Egypt.

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Informed consent was obtained from all enrolled subjects, and guidelines of the US Department of Health and Human Services and those of the authors' institutions for protection of human subjects were followed.

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