

# ABSTRACTED ARTICLES

## IRAN

### Reversibility of cirrhosis in chronic hepatitis B.

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**BACKGROUND & AIMS:** Hepatic fibrosis and cirrhosis are the consequences of many types of chronic liver disease, and, at its final stage when liver nodule and scarring develop, they are generally considered to be irreversible.

**METHODS:** Here we describe 3 patients with chronic hepatitis B with clinical, biochemical, and histologic evidence of cirrhosis. They underwent treatment with interferon-alpha or lamivudine and had follow-up liver biopsy while in clinical, biochemical, and virologic remission. Biopsy specimens were randomly coded in unpaired manner according to patient, and they were read independently by 2 pathologists using the modified hepatitis activity index

(with a maximum stage of 6). The mean interval between biopsies was 5.5 years.

**RESULTS:** The mean ALT level decreased from 113.7 to 28.3 U/L. The mean bilirubin level decreased from 2.4 to 0.9 mg/dL, and the mean prothrombin time decreased from 16.3 to 12.3 seconds. The mean Child-Pugh score decreased from 8 to 5. The mean fibrosis score decreased from 5.8 to 0.5 ( $P = 0.004$ ), and the mean grading score decreased from 10.8 to 3.2 ( $P = 0.017$ ).

**CONCLUSIONS:** Cirrhosis due to chronic hepatitis B might be reversible in some patients who respond to antiviral therapy.

### Synergic effect of chronic hepatitis C infection and beta thalassemia major with marked hepatic iron overload on liver fibrosis: a retrospective cross-sectional study

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**BACKGROUND:** Increased hepatic iron is assumed to potentiate progression towards liver fibrosis in chronic hepatitis C virus (HCV) infection. In this study we have evaluated the potentiating effect of marked hepatic iron overload and chronic HCV infection on hepatic fibrosis in thalassemic patients.

**METHODS:** Liver biopsies of one group of patients with beta thalassemia major and chronic HCV infection (group 1) was compared with two groups of patients (groups 2&3) with either chronic HCV infection or thalassemia major,

respectively (20 patients in each group). Necroinflammation, fibrosis, and iron overload were graded and compared.

**RESULTS:** Stage of fibrosis in group 1 patients was significantly higher than the other two groups ( $p < 0.05$ ). Necroinflammatory grade was significantly lower, but iron score was significantly higher in thalassemic patients (group 3) in comparison to groups 1 and 2 ( $p < 0.05$ ).

**CONCLUSION:** Our results indicate that marked liver iron overload and HCV infection in thalassemic patients have potentiating effect on hepatic fibrogenesis.

## Vaccination alone is not effective, a comparative study on hepatitis B in children of chronic carrier versus healthy mother

Saudi Med J 2004; Vol. 25 (10): 447-451

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**OBJECTIVE:** Although all newborns in Iran have been vaccinated against hepatitis B since March 1993. Routine screening of pregnant women has not been conducted in prenatal care programs, yet transmission of hepatitis B via the maternal-fetal route is still a viable likelihood which must be entertained.

**METHODS:** The subjects were divided into 2 groups. The exposed group comprised 97 vaccinated children whose mothers were seropositive for hepatitis B surface antigen (HBsAg) and had not received hepatitis immunoglobulin at birth. The unexposed group consisted of 87 vaccinated children whose mothers were seronegative for hepatitis B surface antigen. We compared these 2 groups to determine the efficacy of vaccine alone in high-risk children. This study was conducted in Tehran, Iran, from June 2002 to December 2002. All children were born after 1993.

**RESULTS:** Chronic infection (HBsAg positivity) was detected in 14.3% of children in the exposed group. There were no instances of chronic infection in the unexposed group (relative risk [RR]=13.48, 95% confidence intervals [CI] 1.8-100.02). Previous infection of hepatitis B (HBcAb positivity) was found in 29 (29.9%) children in the exposed group, but only one (1.2%) in the unexposed group (RR=26.01, 95% CI: 3.61-186.95). Immunity (HBsAb positivity) in the exposed group measured 48 (49.5%) and unexposed group measured 56 (64.4%) (R.R=0.76, 95% CI: 0.59-0.99).

**CONCLUSION:** Vaccination alone did not induced immunity against hepatitis B in high-risk children; it seems that routine screening of pregnant women is necessary for determining whether neonates need hepatitis B immunoglobulin after birth.

## GSTP1, GSTM1, and GSTT1 genetic polymorphisms in patients with cryptogenic liver cirrhosis

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We investigated glutathione S-transferase (GST) P1 Ile (105) Val, T1, and M1 polymorphisms in 45 patients with documented cryptogenic cirrhosis and 56 healthy control subjects. Polymerase chain reaction-based procedures were performed in the studied populations to confirm the genotypes of GSTT1, M1, and P1. Ile/Val and Val/Val GSTP1 genotypes were more frequent in the patients with cirrhosis (n=39, 87%) than in the control subjects (n=10; 18%) (Odds ratio [OR] 34.04; 95% confidence interval [CI] 10.70 to 108.31, P<0.001). Among these patients with cirrhosis, 16 were heterozygous and 23 were homozygous, whereas only one person in the control group was homozygous.

The GSTM1 null genotype was also more prevalent in cirrhotic patients than in healthy control subjects (OR 6.83, 95% CI 2.53 to 18.42, P<0.001). The rate of GSTT1 deletion did not show a significant difference between the two groups (OR 2.35, 95% CI 0.76 to 7.28, P=0.111). To our knowledge, this is the first evidence that GSTP1 and GSTM1 polymorphisms may be related to the development of cirrhosis by unknown mechanisms. The significant association of cryptogenic cirrhosis with Val/Val GSTP1 genotype encoding a low detoxification activity protein implicates this polymorphism as a risk factor for the occurrence of the disease.

## Lichen planus and Hepatitis C: a case-control study

BMC Dermatol. 2004 May 20; 4(1):6.

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**BACKGROUND:** The association of lichen planus with hepatitis C (HCV) has been widely reported in the literature. However, there are wide geographical variations in the reported prevalence of HCV infection in patients with lichen planus. This study was conducted to determine the frequency of hepatitis C in Iranian patients with lichen planus at Razi hospital, Tehran.

**METHODS:** During the years 1997 and 1998, 146 cases of lichen planus, 78 (53.1%) women and 69 (46.9%) men were diagnosed. They were diagnosed on the basis of the usual clinical features and, if necessary, typical histological findings. The patients were screened for the presence of anti-HCV antibodies by third generation ELISA and liver function tests. We used the results from screening of blood

donors for anti HCV (carried out by Iranian Blood Transfusion Organization) for comparison as the control group.

**RESULTS:** Anti-HCV antibodies were detected in seven cases (4.8%). This was significantly higher than that of the blood donors' antibodies ( $p < 0.001$ ). The odds ratio was 50.37(21.45-112.24). A statistically significant association was demonstrated between erosive lichen planus and HCV infection. Liver function tests were not significantly different between HCV infected and non-infected patients.

**CONCLUSION:** HCV appears to have an etiologic role for lichen planus in Iranian patients. On the other hand, liver function tests are not good screening means for HCV infection.

## Age-specific seroprevalence of hepatitis A infection among children visited in pediatric hospitals of Tehran, Iran

Eur J Epidemiol 2004; 19(3): 275-8.

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**BACKGROUND:** Hepatitis A is an enterically transmitted disease that still remains endemic in many developing countries. In some countries improvements in living conditions have recently led to changing in epidemiology of hepatitis A virus (HAV) infection. In our country there are very few reports on prevalence of HAV infection.

**OBJECTIVE:** To determine the seroprevalence of anti-HAV IgG among children visited in pediatric hospitals of Tehran, Iran.

**METHODS:** The study group included 1018 children who were 6 months-14.9 years of age. These children were visited in four major pediatric hospitals of Tehran. The children were separated to three age groups: Group 1 (6 months-4.9 years;  $n = 469$ ), Group 2 (5.0-9.9 years;

$n = 290$ ), and Group 3 (10.0-14.9 years;  $n = 259$ ). Serum anti-HAV IgG was tested with commercial ELISA kits. The data were tested for statistical significance with chi2 test.

**RESULTS:** In all subjects, seroprevalence of hepatitis A was 22.3% (95% CI: 19.7, 24.9). There was no significant difference between genders (22.2% vs. 22.5% in males and females, respectively) and among age groups (Group 1 was 22.1% and Group 3 was 25.9;  $p > 0.05$ ).

**CONCLUSIONS:** In summary, it seems that HAV infection is not highly endemic at least in some urban areas of Iran. On the basis of this epidemiologic data, post exposure prophylaxis would be necessary for children and young adults, and hepatitis A vaccination strategy should be revised.

## Molecular Epidemiology of Hepatitis C Virus in Iran as Reflected by Phylogenetic Analysis of the NS5B Region

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Hepatitis C virus (HCV) subtypes were determined in 125 Iranian patients by phylogenetic analysis within the NS5B or 50-UTR/core regions. Subtypes 1a and 3a were predominant accounting for 47 and 36%, whereas 1b and

4 accounted for 8 and 7%. This subtype distribution differs from that of Turkey and Pakistan, where subtypes 1b and 3a dominate and also from neighboring Arabic countries where subtype 4 is the prevalent genotype. The Iranian 1a

and 3a strains formed subclusters in the dendrogram indicating that these subtypes are indigenous to Iran. In contrast, the 1b strains intermixed with strains derived worldwide. Subtype 1a was frequent in South Iran (70%), while 3a was more prevalent in North-West Iran (83%), a region with a high proportion of Turkish inhabitants. Patients infected by blood products had more frequently subtype 1a (57%), while younger drug users had more frequently subtype 3a (54%). Genotype 4 was over-represented among haemodialysis patients in Tehran. One strain, most similar to

genotype 5, was highly divergent in the NS5B region and further analysis is needed to assess the systematic status of this strain. In half of the patients with unknown source of infection only the 50-UTR could be amplified, most of which were from North-West Iran and from patients younger than those with unknown source of infection with typable strains, mean age 29 versus 43 years. In conclusion, the NS5B sequence data revealed population based subtype patterns in Iran, the further study of which may help to understand the molecular epidemiology of HCV in a low-endemic area.