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Research Article

### PREVALENCE OF HEPATITIS C IN PATIENTS WITH THALASSEMIA MAJOR AND CHANGES IN LIVER ENZYMES ALT AND AST IN THE CITY *GHIROKARZIN*

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#### ABSTRACT

**Aim and Objective:** Decreased immune system, hepatitis C virus -infected patients and families is Flavio viridae to liver damage. Thus the importance of the liver in detoxification and identify the risks of hepatitis C in patients with thalassemia study is required.

**Methods:** This descriptive - is analytical. A total of 24 patients with thalassemia major city during the spring and summer *Ghirokarzin* ANTI-HCV and HCV-RNA in 92 patients were evaluated and the last ALT and AST levels were extracted from the records.

**Results:** The results showed that the ANTI-HCV in 7 patients (29 %) patients were positive for the 5 patients (4/71%) HCV-RNA positive, the incidence of ALT and AST increased among 60 % of patients with Anti- HCV was positive.

**Keywords:** Thalassemia, Hepatitis C, Liver enzymes, HCV-RNA, Anti-HC.

#### INTRODUCTION

Thalassemia is a regular monthly blood transfusions. injection of the patient's blood are exposed to the risk of complications such as hepatitis C and iron overload and deposition in the body's vital organs like the heart, liver and kidneys and puts.

The disease is prevalent in our country and according to available statistics, there are in addition to the 25,000 patients with thalassemia major .beta - globin chains of asymmetric synthesis and deposition of abundant chain is impaired maturation and survival of red blood cells , so the regular monthly thalassemia major patients need blood transfusions <sup>1</sup>. Until the 1980s, hepatitis A and B only known types of families, hepatitis viruses and other types as hepatitis NON A, NON B were known <sup>2</sup> Initial research on the causes of hepatitis after the injection blood factor suggests that the disease to chimpanzees move, with organic solvents disabled filters nON A passing track. Sets of data led to the identification of viral small that in 1989 the hepatitis C virus was recognized <sup>3</sup>. Hepatitis C virus is a positive single-stranded RNA virus of the family 9.6Kb Znvm is Flavio viridae . The number of people infected with hepatitis C virus infection in the world is estimated at 170 million . Before 1985 the risk of HCV through blood transfusions almost one

unit for every 10 units was estimated <sup>4</sup> and the rate of transmission through blood and blood products contaminated blood in the United States of America of 180,000 cases per year have been reported <sup>5</sup>. So as hepatitis C is the most common blood-borne infection known around the world <sup>9</sup> deaths each year in America due to the level of infection in liver transplant due to hepatitis C 8-10 thousand cases of infection were reported HCV1000 <sup>6</sup> as well as spending a year to treat patients with acute and chronic hepatitis in the USA over \$ 600 million estimated to be <sup>7</sup> acute infection with HCV usually without clinical symptoms and of the acute infection is often undiagnosed and 85-75 % of patients are infected during the course of the chronicity of the disease <sup>3</sup>. A better course of HCV infection in children than adults during the course of the disease, though many are reported to be in critical condition <sup>10</sup>. Chronic infections are asymptomatic , and only 30 % of patients with clinical symptoms are possible during the course of infection <sup>8</sup> can reduce mortality and improve quality of life of these patients have a significant role <sup>11</sup>. Hepatic complications in patients with thalassemia major are divided into two categories, which is caused Transfyvzhnmy include: A) Hepatic complications due to iron overload. B) Secondary to transfusion is added to iron deposition in the liver causes the release of oxygen free radicals, lipid

peroxidation and damage to cell organelles and the damage caused by increased tissue inflammation, hepatic fibrosis and irreversible changes.

C) Hepatic complications resulting from transfusion transmitted infections.

Each thalassemia patients to maintain hemoglobin levels at greater than 10 milligrams per deciliter to transfusion regular monthly needs of the patient at risk for infection due to transfusion, such as HCV, HBV and HIV and HTLV that puts a virus infection hepatitis B and hepatitis C virus and hepatitis can damage liver cells<sup>12</sup>. 18 patients were positive, and the average age of positive 6/4 +6 / 13 years of liver enzymes in the 6/54 % natural and in 4/45 percent were abnormal and conclusions of this study, given the high prevalence of infection-mediated deposition of iron stores in the liver are more serious risk identification and management of these patients had priority and requires careful planning and consistent<sup>13</sup>. The city is *Ghirokarzin*.

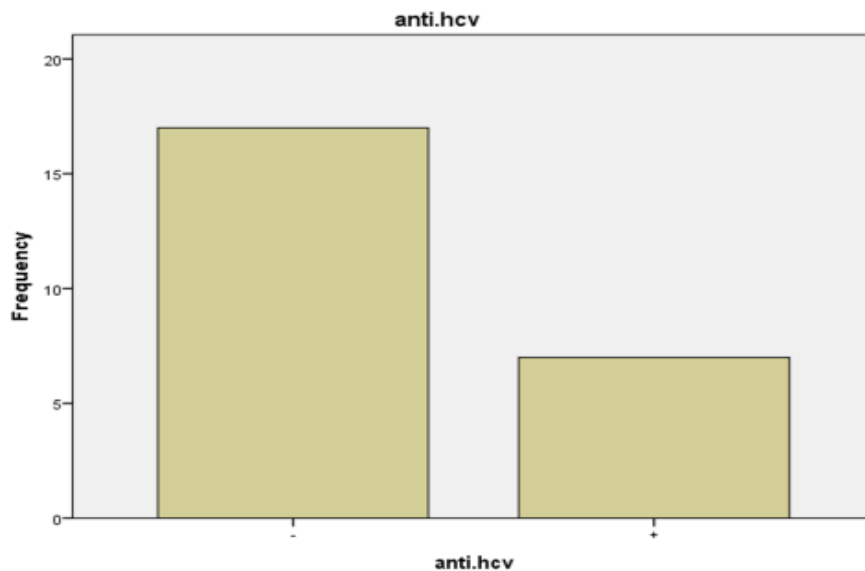
### METHODS

The study included all patients admitted to hospitals thalassemic Imam Muhammad Baqir (AS) *Ghirokarzin* (24 patients) for treatment will be (The population of thalassemia

patients requiring treatment *Ghirokarzin* city) based on the demographic questionnaire and patient records will any of those 5 cc of blood will be tested for HCV-Ab. And biographical questionnaire demographic data including age, sex, age at diagnosis, and number of blood transfusions and more. It should be noted that the samples for antibodies against hepatitis c No special preparation is necessary. After the samples had to be marked on the tubes and serum was prepared from blood samples. The ELISA was performed to test the anti-hcv. The DNA extracted from blood samples collected from HCV virus RNA-PLUS approach was used. After electrophoresis, the gel was transferred to Duke gel-ray machine u/v gel was exposed. A wavelength is emitted from the sample on the gel was analyzed by the computer and compared with controls.

**Table 1 Distribution ANTI-HCV in 24 patients with thalassemia city tar and Karzyn**

Percent	Number	ANTI-HCV
29.2	7	Positive
70.8	17	Negative



**Chart 1: Distribution Anti-HCV in 24 Patients with Thalassemia City Tar and Karzyn**

### RESULTS

#### ALT and AST tests and their relationship with ANTI-HCV Test

In all thalassemia patients, serum levels of ALT and AST were extracted from the document (ALT and AST levels in women than in men than U/L31 U / L 37 and AST levels in women than in normal U / L 31 and in men younger than U / L 41). Most people infected with HCV enhances the alternating alanine aminotransferase, (ALT) and aspartate amino transferase, AST is observed and generally measuring serum

ALT, testing nonspecific important to determine the presence of liver disease and is the best test for monitoring HCV infection is Moreover, patients with increased serum transaminase in prolonged chronic hepatitis should be investigated.

Serum ALT and AST levels, respectively, in 60 % of patients with thalassemia had normal Latr the table is considerably higher incidence of ALT and AST IU / ml 45 is greater among patients ANTI-HCV positive.

**Table 2: Summarizes the Relationship between the Levels of Liver Enzymes (ALT and AST) Anti-HCV Status in Patients with Thalassemia Major**

ANTI- HCV				Variable
Percent	Negative	Percent	Positive	ALT (Iu/ml)
66.7%	10	3.33%	5	45≤
7.77%	7	2.22%	2	45>
Percent	Negative	Percent	Positive	AST (Iu/ml)
7.66%	10	3.33%	5	45≤
8.77%	7	2.22%	2	45>

**Table 3: Distribution of patients with HCV Further RT-PCR experiments**

Percent	Number	
20.8	5	Positive
79.2	19	Negative
100	24	Total

**Table 4: Distribution of Anti-HCV patients further confirmed by RT-PCR experiments**

Percent	Number	Result- RT-PCR
71.4	5	Positive
28.6	2	Negative
%100	7	total

## DISCUSSION

Received blood products contaminated with hepatitis C is the most common way to Vmhtryn Before donated blood in blood banks, respectively<sup>14</sup>.

After performing ELISA on serum samples from 7 out of 24 2/29 % for the presence of antibodies against hepatitis C virus were positive.

Sensitivity and specificity of the test as well as by differences in the prevalence of HCV in serum HCVAb in the general population to be studied.

In a study in India, the prevalence of HCV in patients with thalassemia 5/25 % cited the prevalence in the population of volunteer blood donors 7/1 % has been reported<sup>15</sup>. While two of the high prevalence of HCV in Egypt , 44 % and 75 % have been reported in patients with thalassemia . Prevalence in the general population or a control group in this study , respectively, 12% and 5/14 % has been reported<sup>16</sup>. In another study in London, the prevalence of anti-HCV antibodies in patients with thalassemia 3/23 % have been reported<sup>17</sup>.

In a study in our country by the doctor Alavi and colleagues in 1381 in Qazvin province was conducted on 95 patients with thalassemia major, the prevalence of 2/24 % have been reported<sup>18</sup>. Also , according to another study in 1387 on 410 patients with thalassemia doctor Mir Momin did a HCV prevalence of 27 % was reported<sup>19</sup>. In the same study, the Ansar and the City Klvbandy on 5976 105 thalassemia patients and blood donors did artichoke spread the 9/55 % , 5 / 0 % were reported<sup>13</sup>.

HCV infection increases the risk of damage to the liver cells and liver function tests including ALT and AST is also increased.

In a study by Layvsymbat and colleagues in Italy increased ALT and in 90 % of cases have been referred ANTI-HCV positive.

In a study at our Children's Hospital for Tehran level of ALT and AST levels , respectively, in 8/81 % , and 7/72 % of patients with HCV-RNA positive at higher than normal levels but both ANTI-HCV positive and negative, ferritin between ng / ml 2500-1000 is most prevalent, respectively, 5/61 % and 4/46 % , and no significant difference was observed between serum ferritin level and HCV infection status<sup>20</sup>.

In our study, AST and ALT levels in 60 % of patients with thalassemia ANTI-HCV was higher than normal. In our study, 5 of 7 patients with positive HCVAb patients were HCV-RNA RT-PCR positive to say. In a study in our country by Ismail et Babylonian case-control spindle in 2 patients (2 %) ANTI-HCV -positive patients who have had a positive PCR of them.

## CONCLUSION

The evaluation study found that the prevalence of hepatitis C in patients with thalassemia major due to the continuous injection of blood and also reduce the immune system is very high and the need to increase accuracy in screening incoming blood is felt.

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