Prevelance of hepatitis C Viral Infections among Thalassaemic Patients in Thi -Qar Governorate

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Abstract

A prospective study was conducted on 305 patients with Thalassemia who were attending to the center of inherited blood diseases in Nassiryia city from the penod of 1 / 7 / 1997 to 30/9/2009 .

Elisa test was used to study the prove lance of hepatitis C Viral infections among Thalassaemic children .

Anti-HCV antibodies were detected in 72 (23.6 %) patients , 47(65%)males and 25(35%)females. The frequency of cases was correlated with increasing age.

There was a positive correlation between frequency of blood Transfusion / year and the increased incidence of infection with HCV .

Splenectomy was done in 80 (26.2 %) patients 28 (3S %) of them had positive anti-HCV antibodies in their sera .

We concluded that our Thalassemic patients are exposed to HCV infection .Careful, regular screening of blood unit for HCV should be established .

Introduction

Hepatitis C is an infectious disease affecting the liver , caused by the hepatitis C virus (HCV) (1) .

The infection is often asymptomatic , but once established , chronic infection can progress to scarring of the liver (fibrosis) , and advanced scarring (cirrhosis) which is generally apparent after many years . in some cases , those with cirrhosis will go on to develop liver failure or other complications of cirrhosis , including liver cancer (1) .

The hepatitis C virus (HCV) is spread by blood – to – blood contact .The virus persists in the liver in about 85 % of those infected (2).

Persistent infection can be treated with medications , peginterferon and ribavirin being the standard – of – care therapy . 51% are cured overall (3,4,7) . Those who develop cirrhosis or liver cancer may require a liver transplant and the virus universally recurs after transplantation (6) .

An estimated 270-300 million people worldwide are infected with hepatitis C . (5) . Hepatitis C is a strictly human disease . No vaccine against hepatitis C is available .
The existence of hepatitis C (originally non – A non – B) hepatitis) was postulated in the 1970 and proved conclusively in 1989 . It is one of five known hepatitis viruses : A,B,C,D and E . This study was carried out to establish the prevalence of hepatitis C virus infection among Thalassaemic children in Thi-Qar city .

Patients and methods

Three hundred live thalassemic children (165 (54%) males and 140 (46%) females) .
Who were attending the center of inherited blood diseases in Nassiriyia from the period of 1.7.1997 to 30.9.2009 , were included in the study .
A thorough physical examination of each individual was carried out and history regarding age , date of diagnosis , sex , vaccination status , history of splenectomy and frequency of blood transfusion / year were recorded .
Blood samples (5-10ml) were collected and sent to the central health laboratory in the governorate to detection of Anti-HCV antibodies by using ELISA test murex anti-HCV (version 4.0) .

Results

Out of 305 Thalassaemic children studied , males were 165 (54%) , females were 140 (46%) The age range of the Thalasseamics was between (4 mo-38 years) .
Anti-HCV antibodies were positive in 72 (23.6%) patients , male cases were 47(65%) , females were 25 (35%) as shown in Table (1) .

Table (1) Distribution of Anti HOV a.b according to demographic characteristics among Thalassemic patients In ThI-Qar.

Age (years)	Males				Females			
	No.	%	+Ve Anti - HCV	%	No.	%	+Ve Anti - HCV	%
< 5	25	15.1	6	24	19	13.5	3	15.70
5 - 10	34	20.0	8	23.5	24	17	5	20.8
11 - 15	44	26.6	11	25	40	28.5	7	17.5
16+	62	37.5	22	35.48	57	40.7	10	17.5
Total	165	100	47	22.4	140	100	25	17.8

There was a significant difference in the prevalence of anti–HCV antibodies among our patients according to age as there was an increasing rate of infection in older age groups .
Anti-HCV prevalence seemed to be increased with increasing frequency of blood transfusion .
Anti-HCV prevalence was 3.9% (1/26) , 21% (20/95) 28% (51/184) among thalassaemics. who have been transfused 1-5 ; 6 – 10 and > 10 times / year respectively . Table (2) .

Table (1) Distribution of Anti HCV a.b according to number of blood unites received among Thalassaemic patients

NO . of transfusion unites / year	Anti-HCV a.b		Total
	Positive	Negative	
1 – 5 unites / year	1 (3.9%)	25 (96.2)	26 (8.5%)
6 – 10 unites / year	20 (21)	75 (79%)	95 (31.15)
> 10 unites / year	51 (28%)	133 (72.3)	184 (60.35%)
Total	72 (23.6%)	233 (76.4)	305 (100%)

X^2 15.75 P < 0.01

History of splenectomy was positive in 80 patients (26.2%) 28
(35%) of them got HCV Antibodies in their sera as shown in Table (3) .

Table (3) Distribution of Anti HCV a.b among Splenectomized and non Splenectomized Patients in studied population

	Anti-HCV a.b		Total
	Positive	Negative	
Splenectonized	28 (35%)	52 (65.2)	80 (26.23%)
Non	44 (19.5)	181 (80.5%)	225 (73.8%)
Total	72 (23.6%)	233 (76.4)	305

X^2 10.7 P < 0.05

The study showed that (23.6%) ofthalassemic children in Thi-Qar governorate were positive for HCV antibodies . This rate is similar to that reported in Sulaimanyah center and Ibn Al-Bladey hospital center , but higher than figures reported in the other governorates as shown in Table (4)

Table (4) Prevalence of Anti HCV among thalassemics in Iraq Governorates

Governorate	Total No . of patients	Anti – HGV virus	%	Reference
Diayala	287	51	17.7	Dr. Abdul RAZZAQ
Babel	599	65	10.9	Dr. Ahmed Shemran
Al-Emmara	285	31	10.9	Dr. Haider
Ibn Al-balady hospital	1750	380	21.7	Dr. Zainab
Diwanyah	306	12	3.9	Dr. Jawad Abbas
Sulaimanyah	600	137	22.8	Dr. luqman Khalid
Thi - Qar	305	72	23.6	Present study Dr. Ali Jerin

Discussion

The increased rate of HCV infectious with increasing age was in agreement with other studies (8,9).
The higher anti-HCV prevalence in older age groups may reflect the effect of multiple exposure to HCV during their life.

Previous studies revealed that when the number of transfusion exceeds 10 times there would be a greater risk of infection with HCV 10,11.12).

The higher frequency of positive HCV antibodies among splenectomized children indicate that splenectomy may alter immunity a giant HCV infection .

Another explanation is that splenectomized children are older children requiring frequent blood transfusions and hypersplenism . From this study we conclude that high elevated rate of HCV infection among Thalassemic children in Thi-Qar governorate and more in splenectomized patients .

There was a positive correlation between frequency of blood transfusion and risk of hepatitis C virus infection .

Recommendation

1. Careful screening and selection of blood donors for HCV (15)

2. Using more advance instrument to detected the HCV like PCR .

3. The splenectomy should be done if seriously needed .

4. Provision of anti HCV therapies (interferon or interferon + ribavirin) to prevent progression to further complications (13).

5. All patients with HCV should be immunized with hepatitis B vaccin to minimize further hepatic injury (14).

6. Frequent monitoring and follow-up for possible development of chronic liver disease .

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دراسة مستوى انتشار التهاب الكبد الفايروسي نوع (ج) عند مرضى الثلاسيميا في محافظة ذي قار

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الخلاصـــــــــة : -

تم إشراك (٣٠٥) مريض مصاب بفقر الدم البحري ممن راجعوا مركز أمراض الدم الوراثية في الناصرية خلال الفترة من ١٩٩٧/٧/١ ولغاية ٢٠٠٩/٩/٣٠ في دراسة مستقبلية استهدفت تحديد حجم مشكلة الإصابة بالتهاب الكبد الفيروسي نوع (ج) عند مرضى الثلاسيميا بواسطة فحص (Elisa) .

لقد وجد من الدراسة أن نسبة الإصابة بالتهاب الكبد الفيروسي نوع (ج) ٧٢ (٢٣,٦%) من مجموع المرضى الكلي وان نسبة الذكور ٤٧(٦٥%) أكثر من نسبة الإناث ٢٥(٣٥%) .

لقد وجد في الدراسة أن أغلب الإصابات تزداد مع تقدم العمر.

كذلك وجد هناك زيادة في نسبة الإصابة في التهاب الكبد الفيروسي نوع (ج) مع زيادة عدد مرات إعطاء الدم في السنة .

لقد تم إجراء عملية رفع الطحال عند ٨٠ (٦٢,٢%) من مجموع المرضى ، ومن مجموع هؤلاء وجد ٢٨ (٣٥%) مصاب بالتهاب الكبد الفيروسي نوع (ج).

نستنتج من هذه الدراسة أن مرضى الثلاسيميا اكثر عرضة للإصابة بالتهاب الكبد الفيروسي نوع (ج) وخاصة عند رفع الطحال.

لقد ركزت الدراسة بالتأكيد على إجراء الفحص الاستكشافي للفايروس عند المتبرعين بالدم بصورة دورية ومنتظمة .