

Original Paper

Association between psoriasis and hepatitis B and C

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Abstract

Objectives: The aim of study is to assess the association between patients with psoriasis and hepatitis B and/or C.

Methods: This case control study that enrolled total 110 patients with psoriasis were included in the study, 63 males and 47 females and their age range from 15 to 70 years old , with male to female ratio 1.4 :1 . The study was conducted in Al sader teaching hospital and Al Hakeem hospital in Al Najaf governorate during the period from January 2013 to February 2014. All recruited patients had their ages, gender and case histories recorded on an already prepared data sheet. All recruited patients and control groups had been subjected to that Hepatitis Bs antigen (HBsAg) and anti-hepatitis C antibodies (anti-HCV) were done using Enzyme-linked Immunosorbent Assay (ELISA) kits.

Results: This study that enrolled total 110 patients were included, 63 males and 47 females and their age range from 15 to 70 years old , with male to female ratio 1.4 :1 . There were increased incidence of male patients with psoriasis 63(44.1%), but there were no statistically significant difference between studied patients and control groups, (p=0.5) . There were increased incidence of patients with psoriasis younger than 50 years, 70 (53.8%), statistically significant difference between studied patients and control groups, (p=0.007) .

There were statistically significant difference between studied patients and control groups regarding smoking , 30 (33.3%), (p=0.003). There were increased incidence of seropositive for hepatitis C in patients with psoriasis .There were statistically significant difference between studied patients and control groups regarding hepatitis C 4 (16.7 %), (p=0.003). There were no statistically significant difference between studied patients and control groups regarding hepatitis B 1 (33.3%), (p=0.6) .

Conclusions: This study support of an association between psoriasis and hepatitis C but not with hepatitis B. The predictors for psoriasis as risk factor in this study were male younger than 50 years with history of smoking with association with hepatitis C infection .

Recommendation: Physicians who care for patients with psoriasis should be aware of this possible association and consider screening patients with psoriasis for hepatitis C infection.

Key words: prevalence, Psoriasis, hepatitis B and C .

Introduction

Psoriasis is a chronic inflammatory skin disorder characterized by aberrant T-cell immunodysregulation and by epidermal proliferation mediated by pro-inflammatory cytokine tumor necrosis factor (TNF)- α . Hepatitis C virus (HCV) infection causes varied immune dysregulations, and a high frequency of autoantibodies, particularly anti-, rheumatoid factor (RF) and antinuclear

antibodies (ANA) have been reported⁽¹⁾ . HCV infection may trigger psoriasis, especially late-onset psoriasis, possibly via overproduction of TNF- α , a common mediator of the two conditions .In hepatitis C, continuous inflammation mediated by TNF- α leads to liver cirrhosis. Hence, psoriasis and hepatitis C have pathophysiological factors in common⁽¹⁾. Hepatitis C and B viruses are major public health problems worldwide, which are account for substantial proportion of liver diseases worldwide. These viruses are

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responsible for liver damages ranging from minor disorders to liver cirrhosis and hepatocellular carcinoma (HCC) ⁽²⁾. The world health organization (WHO) estimates that there are 350 million people with chronic HBV infection and 170 million people with chronic HCV infection worldwide⁽³⁾.

The estimated hepatitis B surface antigen (HBsAg) seroprevalence ranges between 0.1%- 20% in different parts of the world⁽⁴⁾. HBV can be transmitted vertically from mother to children or horizontally through sexual or household contact or by unsafe injections, but chronic infections acquired during infancy or childhood account for a disproportionately large share of worldwide morbidity and mortality⁽⁵⁾. Hepatitis C can be also transmitted by percutaneous routes, such as injection drug use, occupational exposure to blood, and the likelihood of infection is increased in hemodialysis units. Although the frequency of transfusion-associated hepatitis C fell as a result of blood-donor screening, the overall frequency of hepatitis C remained the same until the early 1990s, when the overall frequency fell by 80%, in parallel with a reduction in the number of new cases in injection drug users ⁽⁶⁾. Many individuals with chronic hepatitis B are asymptomatic. Chronic hepatitis, associated with elevated serum transaminases, may occur and can lead to cirrhosis, usually after decades of infection ⁽⁷⁾. Vertical transmission from mother to child in the perinatal period is the most common cause of infection world-wide and carries the highest risk. In this setting, adaptive immune responses to HBV may be absent initially, with apparent immunological tolerance ⁽⁸⁾. Chronic HBV infection is marked by the presence of HBsAg and anti-HBc (IgG) in the blood. Hepatitis C is caused by an RNA flavivirus. Acute symptomatic infection with hepatitis C is rare. Most individuals are unaware of when they became infected

and are only identified when they develop chronic liver disease ⁽⁹⁾.

Aims of the Study: To assess the association between patients with psoriasis and hepatitis B and/or C.

Patients and Methods

This case control study that enrolled total 110 patients with psoriasis were included in the study, 63 males and 47 females and their age range from 15 to 70 years old , with male to female ratio 1.4 :1 . The study was conducted in Al sader teaching hospital and Al Hakeem hospital in Al Najaf governorate during the period from January 2013 to February 2014. All recruited patients had their ages, gender and case histories recorded on an already prepared data sheet. Current smoking was considered to be present if the patient had smoked everyday within the previous month. Control cases were considered from medical and dermatological outpatients clinic (130 cases, 80 males & 50 females), with consideration to be matched for age, gender and to cancel the effect of confounding factors, not suffering from psoriasis .

Laboratory tests: All recruited patients and control groups had been subjected to that Hepatitis Bs antigen (HBsAg) and anti-hepatitis C antibodies (anti-HCV) were done using Enzyme-linked Immunosorbent Assay(ELISA) kits.

Statistical Analysis: Data were coded and fed on computer. Analysis was done on SPSS version 20, for determination of statistical significance among different variables. A p-value of less than 0.05 was considered as significant and calculated by method of Pearson Chi square equation. The percentage in result tables were considered for row rather than column.

Results

This case control study that enrolled total 110 patients were included in the study, 63 males and 47 females and their age range

from 15 to 70 years old , with male to female ratio 1.4:1. The study was conducted in Al sader teaching hospital

and Al Hakeem hospital in Al Najaf governorate during the period from January 2013 to February 2014.

Table 1. distribution of gender with psoriasis patients and control

gender	Psoriasis patients		Control		Total (%)	
	NO.	%	NO.	%	NO.	%
	male	63	(44.1%)	80	(55.9%)	143
female	47	(48.5%)	50	(51.5%)	97	(100%)
Total	110	(45.8%)	130	(54.2%)	240	(100%)
P = 0.5						

Table 1 show increased incidence of male patients with psoriasis 63(44.1%) ,but there were no statistically significant

difference between studied patients and control groups , (p=0.5) .

Table 2. distribution of age with psoriasis patients and control

Age	Psoriasis patients		Control		Total (%)	
	NO.	%	NO.	%	NO.	%
	< 50 Years	40	(36.4%)	60	(46.2%)	130
> = 50 Years	110	(45.8%)	70	(63.6%)	110	(100%)
Total	110	(45.8%)	130	(54.2%)	240	(100%)

Table 2 show increased incidence of patients with psoriasis younger than 50 years 70 (53.8%), there were statistically

significant difference between studied patients and control groups, (p=0.007)

Table 3. distribution of smoking with psoriasis patients and control

smoking	Psoriasis patients		Control		Total (%)	
	NO.	%	NO.	%	NO.	%
	30	(33.3%)	60	(66.7%)	90	(100%)
smokers	80	(53.3%)	60	(66.7%)	90	(100%)
Non smokers	110	(45.8%)	70	(46.7%)	150	(100%)
Total	110	(45.8%)	130	(54.2%)	240	(100%)

Table 3 show there were statistically significant difference between studied

patients and control groups regarding smoking 30 (33.3%), (p=0.003).

Table 4. distribution of Hepatitis C with psoriatic patients and control

Hepatitis C	Psoriasis patients		Control		Total (%)	
	NO.	%	NO.	%	NO.	%
	4	(16.7%)	110	(50.9%)	216	(100%)
POSITIVE	106	(49.1%)	20	(83.3%)	24	(100%)
NEGATIVE	110	(45.8%)	110	(50.9%)	216	(100%)
Total	110	(45.8%)	130	(54.2%)	240	(100%)

Table 4 show there were increased incidence of seropositive for hepatitis C (HCV Abs) in patients with psoriasis .There were statistically significant

difference between studied patients and control groups regarding hepatitis C 4 (16.7 %), (p=0.003).

Table 5. distribution of Hepatitis B with psoriatic patients and control

Hepatitis B	Psoriasis patients		Control		Total (%)	
	NO.	%	NO.	%	NO.	%
	Positive	1	(33.3%)	2	(66.7%)	3
Negative	109	(46%)	128	(45%)	237	(100%)
Total	110	(45.8%)	130	(54.2%)	240	(100%)
P = 0.6						

Table 5 show there were no statistically significant difference between studied patients and control groups regarding hepatitis B 1 (33.3%) , (p=0.6) .

Discussion

More than 20 years after the discovery of the hepatitis C virus, it is now well established that HCV is of global importance affecting all countries, leading to a major global health problem that requires widespread active intervention for its prevention and control .The recent assessment finds a global prevalence of 2.35%, affecting 160 million chronically infected individuals ⁽¹⁰⁾. A part from highly risk population, Iraq was still ranked with low prevalence of HCV infection accounting for 1.1% among unpaid blood donors ⁽¹¹⁾. Therefore, the present study showed that the HCV positivity rate among patients with certain non-communicable skin diseases like psoriasis was nearly similar to that in the general Iraqi population, that is to say, HCV infection does constitute a risk factors for acquisition of these skin diseases in our community but there were no statistically significant difference between studied patients and control groups regarding hepatitis B 1 (33.3%) , (p=0.6). So, our study showed increased incidence of male patients with psoriasis 63(44.1%), but there were no statistically significant difference between studied patients and control groups . There were increased incidence of patients with psoriasis younger than 50 years, 70 (53.8%), statistically significant difference between studied patients and control groups,

(p=0.007) .These results were consistent with other studies ^(12,13) .

There were statistically significant difference between studied patients and control groups regarding smoking, 30 (33.3%), (p=0.003).These results were consistent with Cohen AD et al ⁽¹⁰⁾ . There were increased incidence of seropositive for hepatitis C in patients with psoriasis .There were statistically significant difference between studied patients and control groups regarding hepatitis C 4 (16.7 %), (p=0.003) . These results were consistent with other studies ⁽¹⁴⁾ .

It is possible that the presence of HCV in the skin could trigger psoriasis throughstimulating inflammatory cells to infiltrate skin lesions ⁽¹⁴⁾. The possible mechanisms of HCV in the pathogenesis of psoriasis may be speculated to be as follows;

- i) HCV may trigger the breakdown of normal immunoregulation, leading to the development of psoriasis. ^(15,16)
- ii) HCV may act as an exogenous antigen or super antigen. ⁽¹⁶⁾
- iii) HCV infection of the keratinocytes may transform them into another phenotype possessing a new epitope, which may be associated with the onset of psoriasis. ⁽¹⁷⁾

Although the studies concerning the link between HCV infection and other skin diseases such as psoriasis, vitiligo, chronic urticaria, alopecia areata and eczema were few. However, generally our results were in agreement with these studies in that skin condition(psoriasis) have association with HCV infection ^(18,19). Another possible explanation for this association may be related to the limited therapeutic use of

interferon in the treatment of HCV positive patients in our health settings⁽²⁰⁾.

Conclusions

This study support of an association between psoriasis and hepatitis C but not with hepatitis B. The predictors for psoriasis as risk factor in this study were male younger than 50 years with history of smoking with association with hepatitis C .

Recommendation

Physicians who care for patients with psoriasis should be aware of this possible association and consider screening patients with psoriasis for hepatitis C infection.

Further studies and analysis of IFN- α -induced lesions are necessary to clarify the role of IFN- α and the hepatitis C virus in the development of psoriatic lesion

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