

Frequency of HCV seropositivity in patients with pruritus

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Abstract

Objective To determine frequency of HCV seropositivity in patients with pruritus.

Methods This study was conducted in Dermatology department, Bolan Medical College/ Sandeman Hospital Quetta. Approval was taken from the institutional ethical review board. The duration of study was six months. A total of 135 patients with pruritus were included in this study. All cases of pruritus having 18 to 60 years of age of either gender were included. Pruritus was diagnosed on the basis of history and physical examination. All patients were screened for the presence of serological evidence of HCV using the 3rd generation ELISA kit for detection of antibodies to human HCV. On the same day a 5ml blood sample was drawn for LFTs. Finally, outcome variable, i.e. frequency of HCV was noted. All the data was entered and analyzed using SPSS version 20.0. Descriptive statistics was used to calculate mean and standard deviation for quantitative variables like age and duration of pruritus. Frequencies with percentages were presented for qualitative variables like gender, abnormal LFTs, family history of HCV positivity, educational status, and outcome was noted. Effect modifiers were controlled through stratification by age, gender, duration of pruritus, family history of HCV seropositivity, educational status and abnormal LFTs to see the effect of these on outcome variables by applying chi-square test taking p-value <0.05 as significant.

Results A total of 135 patients with pruritus were included in this study. Mean age of the patients was 35.84±10.74 years. There were 79 (58.5%) males and 56 (41.5%) females. Family history of HCV positivity was found in 84 (62.2%) patients. There were 57 (42.2%) patients with abnormal LFTs. Frequency of hepatitis C was found in 31 (23%) patients.

Conclusion In this study, frequency of hepatitis C was found in 23% of the patients with pruritus.

Key words

Hepatitis C, Pruritus, seropositivity.

Introduction

Hepatitis C is a global health issue caused by an RNA virus i.e. HCV.¹ Around the world more than 200 million persons are suffering from hepatitis C with the prevalence of approximately 3.3%.² According to WHO, Pakistan is included

in the countries with higher rates of infection i.e. 4.8%.¹ Hepatitis C causes acute infection less commonly and is a chief source of chronic hepatitis which may progress slowly to cirrhosis and hepatocellular carcinoma (HCC). Apart from hepatic signs and symptoms, numerous extra hepatic manifestations are also associated with it; involving the nervous, renal, gastrointestinal, muscular systems, bones and skin.^{3,4}

Dermatologic manifestations that tend to occur most commonly with HCV are lichen planus,

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pruritus, cryoglobulinemias and porphyria cutanea tarda.^{4,5} Less frequent features include urticaria, erythema multiforme, polyarteritis nodosa, Sjogren's syndrome, erythema nodosum, purpura, Behcet's syndrome, acral necrolytic erythema, psoriasis and vitiligo.^{4,6}

In other studies 80% cases were detected to have skin disorders by Soylu *et al.*⁷ and 71% by Raslan *et al.*⁸ respectively. While prospective studies performed by Cacoub *et al.*³ and Paoletti *et al.*⁹ found HCV-related cutaneous disorders in 17% and 12.5% patients, respectively. This variation could be due to racial, genetic and cultural differences in addition to variable exposure to risk factors.

Pruritus was the commonest cutaneous manifestation seen in 21.1% of our patients.¹⁰ Asim *et al.*⁵ reported pruritus in 35% of cases. Another study described 50% cases of pruritus in Turkey⁷ while Azfar *et al.*⁶ found 15.9% in their study. In a multicenter study, Cacoub *et al.*³ revealed 15% of cases of HCV with pruritus. Similar to our finding, all these studies mentioned pruritus as the most common skin finding in HCV positive patients. In contrast, Paoletti *et al.*⁹ examined 96 patients of hepatitis C prospectively for 3 years and found pruritus in only 1.04% patients.

Materials and Methods

This Cross sectional was conducted at Department of Dermatology, Bolan Medical College/ Sandeman Provincial Hospital, Quetta. The Study duration was 6 months. The sampling technique used was Nonprobability consecutive sampling. All cases of pruritus having 18 to 60 years of age of either gender were included. Pruritus was diagnosed on the basis of history and physical examination. All patients were screened for the presence of serological evidence of HCV using the 3rd generation

ELISA kit for detection of antibodies to human HCV. On the same day a 5ml blood sample was drawn for LFTs. Finally, outcome variable, i.e. frequency of HCV was noted. Taking the prevalence of pruritus 21.1% in hepatitis C seropositivity patients,⁸ confidence interval at 95% and margin of error 7%, and putting this information in Epi Info 7, the sample size calculated is 131. However, we enrolled 135 patients in this study. An informed consent was obtained from the patient for including them in study and using their data in research. Based on history and examination, patients were evaluated for inclusion and exclusion criteria. Complete history and examination was taken for pruritus. During clinical examination, privacy and comfort was taken care of. In order to control bias, the exclusion criteria was followed by principal investigator strictly.

Inclusion criteria

- Case of pruritus, as per operational definition > three months.
- 18-60 years of age.
- Both gender.
- Consent to participate in the study.

Exclusion criteria

- Patients taking drugs causing lichenoid drug eruptions like gold salts, quinine, thiazide diuretics, beta blockers, INH. These may be the cause of pruritus.
- Any other concomitant medical ailments diabetes mellitus (FBS >126 mg/dl), Renal disease (serum creatinine >3 mg/dl). These disorders may aggravate pruritus.

Results

Mean age of the patients was 35.84±10.74 years.

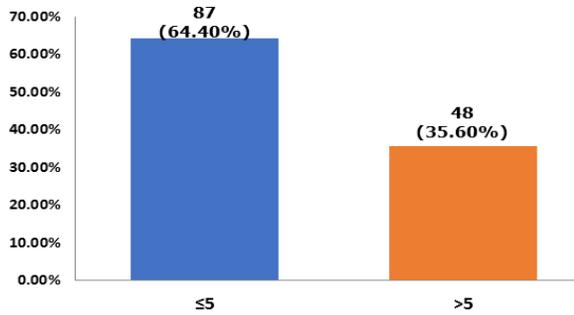


Figure 1 Duration of pruritus (in months).

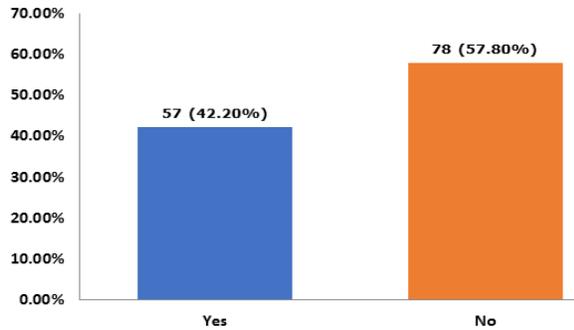


Figure 2 Abnormal LFTs.

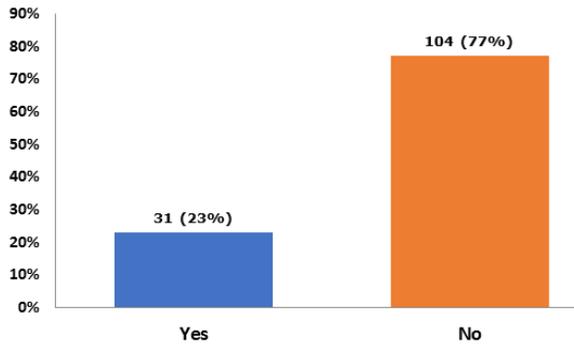


Figure 3 Frequency of hepatitis C.

Majority of the patients 108 (80%) were presented with ≤35 years of age. There were 79

(58.5%) males and 56 (41.5%) females. Mean duration of the pruritus was 34.19±12.82 months. Majority of the patients 87 (64.4%) were presented with ≤5 months of duration (**Figure 1**). Family history of HCV positivity was found in 84 (62.2%) patients.

Majority of the patients 69 (51.1%) were illiterate, followed by less than or equal to matric 34 (25.2%) and more than or equal to intermediate 32 (23.7%) patients.

There were 57 (42.2%) patients abnormal LFTs (**Figure 2**).

Frequency of hepatitis C was found in 31 (23%) patients (**Figure 3**).

The association of hepatitis C was found significant with gender (p-value 0.044), educational status (p-value 0.004) and abnormal LFT (p-value <0.001) whereas age (p-value 0.919), duration of pruritus (p-value 0.676), and family history of hepatitis C (p-value 0.253) were found insignificant (**Table 1, 2**).

Discussion

Dermatologic manifestations that tend to occur most commonly with HCV are lichen planus, pruritus, cryoglobulinemias and porphyria cutanea tarda.^{4,5} Less frequent features include urticaria, erythema multiforme, polyarteritis

Table 1 Comparison of hepatitis C seropositivity with duration of pruritus (n=135).

Duration of pruritus (in months)	Hepatitis C seropositivity		Total	p-value
	Yes	No		
≤5	19 (21.8)	68 (78.2)	87 (100)	0.676
>5	12 (25)	36 (75)	48 (100)	
Total	31 (23)	104 (77)	135 (100)	

Table 2 Comparison of hepatitis C seropositivity with abnormal LFTs (n=135).

Abnormal LFT	Hepatitis C seropositivity		Total	p-value
	Yes	No		
Yes	31 (54.4)	26 (45.6)	57 (100)	<0.001
No	0 (0)	78 (100)	78 (100)	
Total	31 (23)	104 (77)	135 (100)	

nodosa, Sjogren's syndrome, erythema nodosum, purpura, Behcet's syndrome, acral necrolytic erythema, psoriasis and vitiligo.^{4,6}

In this study, frequency of hepatitis C was found in 31 (23%) patients.

In other studies 80% cases were detected to have skin disorders by Soylu *et al.*⁷ and 71% by Raslan *et al.*⁸ respectively. While prospective studies performed by Cacoub *et al.*³ and Paoletti *et al.*⁹ found HCV-related cutaneous disorders in 17% and 12.5% patients, respectively. This variation could be due to racial, genetic and cultural differences in addition to variable exposure to risk factors.

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Current treatment strategies include topical therapies for mild and localized pruritus as well as systemic therapies for patients with severe or generalized pruritus.¹⁰ Based on the fact that histamine-dependent mechanisms are responsible for the occurrence of pruritus associated with urticaria, the clinical utilization of antihistamines has been suggested as a therapeutic option for prurigo nodularis or aquagenic pruritus.¹¹ Thus, once the cause of pruritus has been identified, the implementation of the therapeutic modalities can be determined. The current guidelines suggest the application of

topical substances such as capsaicin and calcineurin inhibitors, particularly in patients with chronic pruritus.¹² These substances have been approved for their effects on cutaneous neurons, where they serve as suppressors for chronic pruritus.

Substances like opioid receptor antagonists, anticonvulsants, selective serotonin re-uptake inhibitors and antidepressants have been recommended. Although therapeutic options of pruritus are available, the lack of well-conducted, randomized, controlled studies is an obstacle for the development of an effective and uniform treatment protocol. Cholestyramine is the most recommended first line therapy for pruritus, while rifampicin, opiate antagonists and sertraline have been utilized as second-, third-, and fourth-line therapies, respectively.¹³

In addition to the poor prognosis of patients with pruritus, topical and systemic therapies can offer only short term relief and most are associated with complicated adverse effects, particularly, in patients with chronic HCV infection.

Although antiviral therapeutics have improved in recent years, the treatment of HCV patients is associated with a marked increase in dermatological adverse effects, particularly pruritus.

In addition, it is difficult to distinguish between treatment- and HCV-induced pruritus in terms of causality. Even the consequences of the interference of anti-viral therapy with HCV-induced extrahepatic manifestations are not predictable. Although the treatment of HCV patients with interferon is commonly associated with local and generalized dermatological side effects, including pruritus, the combination of interferon with ribavirin increases the risk of pruritus occurrence.¹⁴ For example, the frequency of dermatological adverse effects

including pruritus associated with HCV protease inhibitors as combinatory part of the triple therapy regimen (telaprevir/boceprevir with peginterferon/ ribavirin), are higher than those associated with peg interferon/ribavirin regimen alone.¹⁵

Conclusion

In this study, frequency of hepatitis C was found in 23% of the patients with pruritus.

Hepatitis C is a common cause of morbidity and mortality in our region and dermatologists should include screening of Hepatitis C in the investigations of a patient with pruritus of unknown cause.

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