

Association of HCV and chronic urticaria resistant to empirical anti-histamine therapy

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Abstract

Objective Hepatitis C (HCV) is associated with many dermatological manifestations. The aim of this study was to establish an association between HCV infection and chronic urticaria resistant to empirical anti-histamine therapy in patients of district Sargodha.

Methods A total of 300 patients of chronic urticaria (>6 weeks) resistant to empirical anti-histamine therapy with different age groups ranging (18-60) years were examined for presence of antibody to HCV in a control population. A retrospective study was carried out at District Headquarters Hospital Sargodha over a period of 1st April, 2019 to 31st October 2019. Patients of chronic urticaria resistant to empirical anti-histamine therapy with no previous history of diabetes mellitus, hypertension or any other chronic illnesses like chronic liver disease (CLD), chronic renal failure (CRF) etc. were selected randomly. Fresh blood samples were taken from these patients and examined for HCV antibodies through serological techniques. All 300 patients (157 males and 143 females) included in the study were diagnosed to have chronic urticaria of duration more than 6 weeks and none of them had previously diagnosed HCV infection.

Results From 300 patients of chronic urticaria resistant to empirical anti-histamine therapy, 57 patients (34 males and 23 females) were diagnosed to have HCV antibodies and 243 patients showed negative results.

Conclusion Our findings show a calculated prevalence of patients with HCV infection among chronic urticaria patients resistant to empirical anti-histamine therapy.

Key words

Hepatitis C, chronic urticaria, anti-histamine.

Introduction

Urticaria is a skin disorder characterized by slightly elevated erythematous papules or plaques¹ which are itchy and present as an acute (<6 weeks) or chronic (>6 weeks).² About 80% of urticaria is categorized as spontaneous, 10% as physical, and less than 10% fit in special

forms³ It is caused by a variety of factors like food, drugs, insect bite, heat or cold etc.⁴

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Regarding empirical treatment of urticaria, first generation antihistamines H1, such as chlorpheniramine, diphenhydramine, clemastine and hydroxyzine are very fruitful in the treatment of urticaria, but the added problem is their excessive sedating and anti-muscarinic effects.⁵ A better option in this case is second-generation antihistamines H1, which do not cross the blood-brain barrier leading to less sedation and adverse effects as compared to older anti-histamines. These newer agents include cetirizine, epinastine, acrivastine, loratadine, fexofenadine, ebastine, izolastine and azelastine which cause considerably less drowsiness and psychomotor impairment as compared to older anti-histamines.⁶

Hepatitis C is an RNA virus with at least six genotypes. It not only affects liver but also affects numerous extrahepatic organs including skin. The most common dermatological manifestations are mixed cryoglobulinemia, porphyria cutanea tarda and lichen planus along with erythema nodosum, erythema multiform, pruritus and urticaria.¹ The association of HCV infection with acute urticaria was described during the early years of the investigation of HCV, although similar observations were rarely published by other authors.² A link between chronic urticaria and HCV infection was suggested when 19 (24%) of 79 Japanese patients with urticaria were infected with HCV.³ Hepatitis B virus (HBV) infection is also known to cause urticaria.⁷ HCV infection may be an important cause of chronic urticaria and sometimes the first finding of this disease .A similar study was done in 2008 in Lahore General Hospital where out of 48 patients (32 females and 16 males) of chronic urticaria, anti HCV antibodies were positive in 6 patients (12.5%) proving a statistically significant association between them.⁸

Methods

This study was conducted at department of dermatology District Headquarters Hospital Sargodha from April 2019 to October 2019. Before initiation of the study institutional review board permission was obtained. The participants were ensured of privacy and secrecy and verbal informed consent was taken from each participant. The patients with urticaria who volunteered in this study were categorized by using non-probability sampling technique. Exclusion criteria was any known chronic illnesses and urticarial vasculitis. A total of 300 patients were enrolled in the study. Patients with urticaria > than 6 weeks who took any kind of anti-histamine drugs for the treatment of urticaria for more than one week and did not respond to this empirical anti-histamine drug treatment were added in this study. Inclusion criteria were patients of both sexes and of variable age groups mostly between (18-60) years of age with no previous history of any known liver disease or any other chronic illness. Patients name, age, gender, address and mobile number were noted in a pre-designed proforma. Fresh blood samples were taken from these patients and examined for HCV antibodies through serological techniques.

Results

Out of 300 patients 57(19%) were seropositive of hepatitis C of which 34 were male and 23 were female and there age ranged from 18-60 years.

Discussion

Urticaria is characterized by pruritic wheals (hives) and angioedema due to multiple causes or triggering factors like drugs, food additives, aeroallergens and infections (like Hepatitis B and Hepatitis C). It is classified as acute (<6

Table 1 Age and gender wise distribution of enrolled patients (n=300).

Age range (yrs.)	Male (n%)	Female (n%)	Total (n%)
18-28	30(10%)	27(9%)	57(19%)
28-38	43(14%)	38(13%)	81(27%)
38-48	51(17%)	48(16%)	99(33%)
48-60	33(16%)	30(10%)	63(26%)

Table 2 Age and sex distribution of seropositive patients (n=57).

Age range (yrs.)	Male (n%)	Female (n%)	Total (n%)
18-28	4(7%)	1(1.75%)	5(8.77%)
28-38	6(10.5%)	7(12.28%)	13(22.8%)
38-48	9(15.7%)	8(14.03%)	17(29.82%)
48-60	15(26.3%)	7(12.28%)	22(38.59%)



Figure 1



Figure 2

weeks) or chronic urticaria (>6weeks) according to its duration.⁸ Chronic urticaria is spontaneous and inducible. Clinically it presents as physical urticaria, contact urticaria, cholinergic urticaria, ordinary urticaria, urticarial vasculitis and angioedema.⁹ The etiology is still unclear but pathogenesis is immune or non-immune mediated where pro-inflammatory cytokines are released from mast cells and basophil activation resulting in intradermal edema due to capillary and venous dilation.¹⁰

Hepatitis C is a single stranded RNA virus, member of the Flaviviridae family having 7 genotypes and 67 subtypes. It is the most common blood borne virus leading to progressive liver disease (>50%). The prevalence of HCV in Pakistan is about 6% of total population with most common genotype.¹¹ Unlike Hepatitis A, Hepatitis B(HBV) and Hepatitis C(HCV) can cause chronic disease with long term liver damage and cutaneous manifestations. Previously a study conducted in 1983 revealed hepatitis B viral antigens in patients of chronic urticaria.¹² Therefore several studies are being done to establish the relationship between chronic urticaria and hepatitis C because of its tendency to cause chronic illness.

Our study established that there is positive relation between hepatitis C and chronic urticaria resistant to anti-histamine therapy as 57 (19%) out of 300 patients with chronic urticaria were HCV positive. A similar study was conducted at Baqai Medical Institute and Dow Medical University from 1st January 2003 to 30th June 2003 showed somewhat significant relationship with 13.2% patients out of 114 patients of chronic urticaria tested positive for HCV.² Similarly another recent study done at Dermatology Department of Pak Red Crescent Hospital from 1st February to 31st July 2019 on seropositivity of anti HCV in both acute and chronic urticaria, in which out of 111 patients, 85 patients had chronic urticaria and 18 of them were seropositive for anti HCV antibodies.⁸

Conclusion

We conclude that there is significant relationship between chronic urticaria resistant to empirical anti-histamine therapy and hepatitis C. However it may depend on disease epidemiology and prevalence of hepatitis C infection in that region.

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