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Research Article

**STUDY TO DETERMINE THE ASSOCIATION OF BETEL
CHEWING WITH CHRONIC URTICARIA**Dr. Hafiz Muhammad Ali Hasnain¹, Dr. Asim Din², Dr. Muhammad Yaseen Wajid³¹University College of Medicine and Dentistry, Lahore, ^{2,3}Foundation University Medical College, Rawalpindi.**Article Received:** October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:****Background:**

Chronic urticaria is a common dermatosis with multifactorial etiology, including food intake. The incidence of chronic urticaria has doubled over the past decade. Chewing betel nut is common in Pakistan.

Aim: To identify the association of betel nut with chronic urticaria as the underlying cause of the local population.

Patients and methods: During one year, patients with chronic urticaria were examined in our department to determine the cause. The study was held in the Dermatology department of Jinnah Hospital, Lahore for one-year duration from June 2019 to June 2020.

Results: Out of 2,625 all cases of urticaria, 943 (35.9%) were found to simply chew betel nut (supari) and pan (betel leaf) and gutta (betel and lime leaf). Ninety-two out of 95 volunteers improved symptoms after abstinence from betel nut. Eighty-five of them reported a recurrence of a retry with the suspected substance, confirming a causal relationship

Conclusion: Observations suggest that consumption of betel in the form of sweetened supari and pan masala and gutka correlates with chronic urticaria.

Key words: chronic urticaria, betel.

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INTRODUCTION:

Urticaria and / or angioedema is a common reactive phenomenon and it is estimated that about 20% of people suffer from urticaria at one time or another during their life [1-2]. Acute urticaria can be severe but it is short-lived and less affects dermatologists. When urticaria persists for more than six to twelve weeks, it is considered chronic. Dermatologists are more concerned about chronic urticaria because of its difficult etiology, which remains unclear in more than 75 percent of cases. Association with systemic diseases such as mycobacteria, chronic sinusitis, dental abscess, SLE, leukocytoclastic vasculitis, and thyroid disorders [3-4]. Vaginal candidiasis and trichomoniasis are common in women. Urticaria is also caused by physical stimuli such as temperature, sunlight, and physical pressure [5-6]. Specific hypersensitivity to aero allergenic allergens, idiosyncratic reactions to drugs or food chemicals and additives may cause hives in some people, but other inherent or unknown factors dominate in most [7-8]. Regardless of the cause, the pathogenesis of urticaria has a common mechanism, irrespective of its etiology. When looking at the profile of skin diseases among all patients coming to the dermatology clinic, the incidence of urticaria doubled (personal observation) [9-10]. The main purpose of this study was to sort out the main factors.

MATERIALS AND METHODS:

The study was held in the Dermatology department of Jinnah Hospital, Lahore for one-year duration from June 2019 to June 2020. All patients with chronic urticaria who visited the Outpatient Dermatology Clinic participated in this observational study. 2,625 (5.8%) of all cases showing signs and symptoms of

urticaria were thoroughly investigated more than 10 weeks known as chronic urticaria. In particular, a detailed personal history was collected regarding the respiratory, urinary and gastrointestinal systems. Drugs, especially NSAIDs, alcohol or any drug addict were noted. The mouth, nose and throat of each individual were carefully examined to evaluate the effects of smoking and other dietary and chewing measures, especially supari (betel nut), pan (betel leaf) and gutka (betel leaf and lime). For compulsive individuals, the duration and amount of daily consumption were also recorded to assess their association with signs and symptoms and chronicity of urticaria.

Blood counts, ESR, detailed urine and stool tests were performed in each case. In many cases, an ultrasound scan of the abdominal cavity, chest and sinuses was performed. People with acid digestive disease were also tested for *Helicobacter pylori*. In ten cases, thyroid examination and thyroid function tests were performed. All thyroid tests were within normal limits. Skin biopsy was suggested in four cases where the blisters lasted more than 48 hours and did not respond to antihistamines, all four had urticarial vasculitis.

RESULTS:

In our study of 2,625 cases of chronic urticaria, we observed a higher incidence of urticaria at the age of 30-50 for both sexes. 90% of patients belonged to a lower socioeconomic group. In 35.9% (943) of cases of chronic urticaria, we observed excessive use of some form of betel ingredients, especially gutka, supari and pan masala. Table 1 shows the study population by age and sex.

Table 1 Age & sex distribution of patients of chronic urticaria (n=2625)

Age (years)	Male No. (%)	Female No. (%)
0-10	48 (1.8)	35 (1.3)
11-20	142 (5.5)	133 (5.1)
21-30	356 (13.6)	292 (11.1)
31-40	278 (10.6)	461 (17.4)
41-50	149 (5.8)	383 (14.6)
51-60	85 (3.3)	138 (5.2)
>61	68 (2.6)	57 (2.1)
Total	1128 (43.2)	1497 (56.8)

There has been a history of two or more years of taking these substances. On further questioning, more than 85% reported a history of vague lower abdominal pain, nausea, irregular bowel movements, constant mild cough and sore throat, and occasional palpitations. 23% of those affected reported an improvement in

urticaria when they did not ingest a lot of gutty. Other causative factors were found in 5.6% (147) of cases (except those caused by betel ingredients). These included chronic, recurrent infections that were under-treated, e.g., pickles among dietary products. Betel Reaction From these 943 cases of people suffering

from betel constituents, we randomly selected 95 patients who voluntarily stopped taking supari, pan masala and gutka as per our recommendations. 92 out of 95 volunteers received help within 15 days. One month later, they were re-administered the suspect material, and within 20 days, 85 volunteers reappeared.

DISCUSSION:

The most important and difficult aspect of urticaria is determining the cause, which is very difficult in most chronic urticaria [11]. A prerequisite for the study of chronic urticaria is the establishment of a pattern of occurrence that includes the onset, duration and course of the disease. The varied pattern of incidence suggests that external factors, such as allergic, exogenous and physical causes of urticaria, are the source of the individual's challenges. The constant pattern of onset suggests habitual exposure to exogenous provocations such as normal food or a patient's underlying cause such as certain underlying infections, collagen disorders, etc. In 60% of chronic urticaria, no specific cause was found despite best efforts [12]. Multiple and comprehensive sessions devoted to detailed history, food, hobbies, medications, dairy products, complete blood counts, repeated routine tests, especially for UTI and GI infections, and attempting a diet without food additives are some of the appropriate approaches. The ingestion of allergens undoubtedly plays a role in the symptoms of some patients, as well as atopic and non-atopic and gastrointestinal symptoms, such as lip swelling, vomiting, diarrhea, and anal itching. Our study found betel use to be the leading cause in 35.9% of cases. This important discovery was confirmed by a new challenge. Chewing betel nut has been an important social activity in many countries for millennia. It has many cultural roles, is a mild psychostimulant and is believed to be addictive. Chewing betel nut is also a social and cultural component of Pakistani society. Betel has been associated with oral submucosal fibrosis (OSF), leukoplakia, and oral squamous cell carcinoma. OSF is often associated with mucosal leukoplakia and loss of the lingual papillae [13-14]. OSF is considered a precancerous condition by many researchers. Perleche and lichen planus lesions have also been observed in betel chewing. Gutka is a mixture of leaf (Piper betel), areca palm nut, catechu - a spice obtained from *Accacia catechu*, lime (calcium hydroxide) and tobacco. All of these ingredients are of poor quality (even those affected by fungi) that are dubbed for several days to soften. Some flavoring substances are finally added before being packaged and placed on the market. Due to its moderate psychostimulating effect and relatively low price, the vast majority of workers,

their working women, children and the elderly consume this admixture practically all working hours. It is known that mothers give their babies pre-plastic fluids. Betel lime and areca nut are the two major carcinogenic ingredients in betel. The active ingredient in areca nut is arecoline, an alkaloid with properties similar to acetylcholine. Arecoline may cause bronchospasm and may trigger asthma [15]. Cholinergic activity can cause urticarial rash. There is a lot of publication in the newspapers against eating the pan and supari, but there is still a need for an awareness campaign, especially by social and health organizations in our country. Pakistan's Ministry of Health and Family Care requires warning labels and pan masala to be displayed on supari packages stating that the products are harmful to health.

CONCLUSION:

In Pakistan, local authorities have banned public betel spitting as part of an effort to clean up the city. Although we did note a link between hives and betel consumption; However, further studies are warranted to reaffirm this link.

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