AETIOLOGICAL SPECTRUM OF URTICARIA

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One hundred patients of urticaria were investigated to establish the causative agents. A detailed history, clinical examination and routine investigations led to detection of the cause in 34% patients. Bacterial foci were responsible in 10%, worm infestations in 6%, drugs in 6%, insect bites in 3%, cold in 2%, cholinergic in 4% and dermographic in 3% cases. In 60% cases, the cause was detected by intradermal tests with antigen extracts of pollen, fungi, insect fragments, dusts, danders and food. Inhalants were responsible in 35% and foods in 25% cases. Among inhalants. pollen were found in 26%, insects in 11%, fungi in 9%, house dust and buffalo dander in 1% each. In 6% patients, no cause could be detected in spite of extensive investigations.

Key words : Urticaria, Aetiology.

Various factors reported to precipitate urticaria include physical agents such as heat, cold, sunlight, friction and pressure; drugs; foods; inhalants such as pollen, fungal spores, dust, animal dander and fragments of household insects; emotional stimuli; gastro-intestinal parasites; infective foci; stinging insects and rarely as a manifestation of serum sickness; systemic lupus erythematosus or internal malignancies.[1]

Although, Pasricha and Minochar[2] eported unreliability of intradermal tests with food antigens, as compared to the exposure and withdrawal tests in food urticaria, an attempt has been made in this study to further investigate cases of chronic urticaria utilising a wider spectrum of antigens belonging to the groups of inhalants i.e. pollen, fungi, dusts, danders and insects in addition to food articles.

Materials and Methods

This study was conducted on 100 patients having urticaria, seen over a period of 18 months from March 1986 to August 1987. A detailed history was recorded in terms of frequency of attacks; time of the day; seasonal association; place of the attack whether home or work place; relation with ingestion of foods or drugs; relation with physical activity, cold water baths or cold winds; and history of fever, sore-throat, cough, joint pains and urinary or bowel trouble. Routine laboratory investigations on blood, urine and stools were done to find out any evidence of infection or parasite infestations.

Intradermal tests were done with antigens of foods, pollen, fungi, dusts, danders and insect fragments obtained from CSIR Centre for Biochemicals, VP Chest Institute, Delhi. 0.02 ml of each antigen was injected intradermally, using buffered normal saline as a control. Readings were taken after half an hour and the test results were recorded as per the criteria described by Shivpuri.[3] Clinically, a patient was considered to be having urticaria due to inhalants if the symptoms occurred only during a particular period of the year or the patient showed improvement on moving to a different place.[4] Identification of the allergen was done in such cases by performing intradermal tests. Food urticaria was suspected when the patient had repeatedly noticed aggravation of symptoms following ingestion of certain foods. Intradermal tests were done with food antigens, but the diagnosis was considered valid only after its confirmation by diet elimination and provocatoin test as described earlier.[2] Cold urticaria was

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diagnosed if it had relation with winter season, cold winds, cold water bath, cold drink or it occurred after drenching in the rain, sitting under a fan while sweating or on entering an air conditioned room.[4] The diagnosis was confirmed by ice cube test. The diagnosis of cholinergic urticaria was considered only if the patients developed urticaria on exposure to sunlight, on physical exertion or after emotional upset. Dermographic urticaria had linear wheals which remained localized to the scratched area. The diagnosis was confirmed by dermographism. Pressure urticaria was diagnosed when the lesions occurred only at those sites which had been subjected to pressure for several hours as from a tight belt, watch strap etc. Drugs were considered responsible if there was a clear-cut or repeated history of recurrence following administration of some drug. Worm infestation was given importance as the cause of urticaria only if the attacks ceased to occur after deworming. Urticaria was considered to be due to bacterial infections if there was clinical evidence of a focus of infection and/or raised TLC with an increase in polymorphs, and improvement after antibiotic therapy.

Results

Among 100 patients, age ranged from 12 years to 67 years, majority (71%) of them belonging to the age group of 21 to 40 years. Females were 54% and males 46%.

The cause was detected by history, clinical examination and routine investigations in 34% patients, bacterial foci being responsible in 10%, worm infestations in 6%, drugs in 6%, insect bite in 3%, cold in 2%, cholinergic in 4% and dermographic in 3% cases. In 60% cases, the cause of urticaria was detected by intradermal tests with pollen, fungi, insects, dusts, danders and foods; but in the remaining 6% patients no cause could be found out even after detailed investigations. Inhalants were detected to be the causative agent in 35% cases and foods in 25% patients.

Among inhalants, pollen were found to be causative factors in 26% patients, with *Adhatoda* in 11%, *Eucalyptus* in 8%, *Cannabis indica* in 7%, *Cynodon*, *Artemesia* and *Chenopodium album* in 6% each, and *Asphodelus*, *Clerodendrum* and *Cenchrus* in 4% patients each. There was a considerable degree of overlap due to positivity with multiple antigens in most of the patients.

Insect antigens showed positive reactions in 11% patients (*locust male* in 10%, *Jassid* in 8%, *yellow wasp* and *butterfly* in 6% each and *locust female* and *honey bee* in 5% patients each).

Fungi gave positive reactions in 9% patients, *Candida albicans* and *Fusarium solanii* being the commonest agents in 6% patients each, *Mucor*, *Phoma hybernicus* and *Aspergillus fumigatus* in 3% patients each. House dust and buffalo dander were positive in one percent each.

Patients having food urticaria showed positive intradermal tests with egg white in 13%, potato in 8%, coffee and gram in 7% each; garlic in 5%; mustard, moong, ground-nut, apple and banana in 4% each; and arhar dal, cashew-nut, urad, milk and maize in 3% patients each respectively. Diet elimination and provocation tests could confirm the cause in 16 out of 25 patients.

Bacterial foci comprising 10% of the total patients included one patient each having tonsillitis and carbuncle, two patients of sinusitis and three patients of urinary tract infection. Three patients had raised leucocytic counts with an increase in polymorphonuclear cells.

Among worm infestations, though ten patients harboured worms, it was only in 6 persons that deworming led to regression of urticaria. The parasites discovered were round worm in 1, hookworm in 2, *Giardia lamblia* in 2 and *Entamoeba histolytica* in 1 patient respectively.

Drugs responsible for 6 cases of urticaria comprised analgin, aspirin, ampicillin and alcohol in one patient each and chloroquine in two patients.

Comments

Establishing the cause of urticaria is difficult. A thorough clinical history can reveal the actual cause of urticaria in cases of allergy due to physical causes, drugs, emotional stimuli and in some cases of inhalant or food urticaria. The diagnostic criteria have, however, to be very strict and accurate.

Hypersensitivity to bacteria as a cause of urticaria has been mentioned in the literature.[5,6] Since bacterial foci can be located at many sites in the body such as teeth, tonsils, kidneys, gall bladder, intestines or paranasal sinuses, it is often impossible to locate the bacterial focus, particularly when it is not producing any signs and symptoms.[4] In the present study, out of 10 cases, focus of infection could be located in only 7, whereas in the remaining 3, antibiotic trial alone was helpful in indicating the cause of urticaria. In a study conducted by Pasricha,[7] antibiotic therapy in patients suffering from urticaria of unknown aetiology, resulted in considerable relief in more than 50% cases.

Although, Monroe and Jones[6] have mentioned parasitic infestations of gastro-intestinal tract as an important cause of urticaria, Pasricha et al[8] were unable to detect any significant difference in the occurrence of parasitic infestations in the patients of urticaria and normal controls. Moreover, elimination of parasites in urticaria in most patients had no significant effect on the course of urticaria in most of those cases. In the study conducted by Pasricha and Kanwar,[1] there were only 1.4% cases in whom elmination of parasites resulted in relief from urticaria. In the present study also, although worm infestations were detected in 10% patients, deworming led to regression of urticaria in only 6% patients.

Drugs should be considered as a probable cause either when the urticaria is of a short duration or if the attacks occur at infrequent intervals. Sometimes history may be clear-cut indicating some drug as a cause of urticaria. Almost any drug can cause urticaria but penicillins and salicylates are frequently responsible.[1] The drugs found responsible for urticarial attacks in our patients were analgin, aspirin, ampicillin, alcohol and chloroquine.

Cholinergic urticaria is a more generalized skin reaction with occasional systemic manifestations.[9,10] In the present study, it was detected in 4% cases, whereas Pasricha and Kanwar[1] detected it in 10.3% cases.

Cold urticaria was diagnosed in 2% patients only, whereas Pasricha and Kanwar[1] detected 9.3% cases of cold urticaria by cryostimulation test, which is considered to be a more reliable test for the diagnosis of cold urticaria[1] than the ice cube test as used in this study.

Inhalant urticaria was diagnosed in 35% cases, whereas in the study conducted by Pasricha and Kanwar[1] it was reported in only 7.7% cases. The difference may be due to the fact that in the present study, intradermal tests were used with respective antigens.

Similarly, food urticaria was diagnosed in 25% cases based on intradermal tests with various food antigens, but diet elimination and provocation test confirmed the findings in only 16% cases, whereas, Pasricha and Kanwar[1] detected food as a cause of urticaria in only 6.9% cases based on diet elimination and provocation tests.

Thus, intradermal tests were able to detect the cause in a large percentage (60%) of cases and at the same time these tests helped in identifying the specific agent which could either be eliminated or specific desensitization attempted for the management of urticaria.

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