

## STUDIES ON 100 CASES OF URTICARIA WITH PARTICULAR REFERENCE TO THE ETIOLOGY

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Urticaria is a common problem encountered in Dermatology clinic. According to Scheldon et al (1954) it attacks perhaps 15% of the general population at sometime in their lives. During 1969 we had 469 cases of urticaria among 16,720 new cases which forms about 2.8% of all Dermatology cases.

Despite advances in the knowledge of the basic mechanisms involved in the production of urticaria the clinical evaluation of the cases of urticaria is often inadequate especially in this part of the country. So a study was undertaken to find out the following 1) the etiology of urticaria in this region 2) the incidence of atopy in urticaria patients 3) the incidence of Dermographism in patients suffering from urticaria 4) whether the clinical manifestation and course of the disease differ according to the etiology.

### Materials and Methods :

One hundred cases of urticaria seen over a period of one year were investigated. A protocol including detailed history, environmental survey, physical examination, data record for investigation and treatment gave a uniform approach for all cases.

An E.N.T. check up and dental check up to rule out focus of infection, a total and differential leucocyte count, erythrocyte sedimentation rate, stool examination for parasites and microscopic

examination of urine were done in all cases. X-Ray examination, L.E. cell test, serum protein studies, etc., were done only in selected cases.

In addition to these routine tests certain special tests were carried out in selected patients as suggested by the history of their illness.

### 1. Local cold test :

30 mm diameter area of the skin of the forearm was exposed to 0° for 2 minutes by thermostimulator and an increase in the erythema for more than 35 mm in diameter or urticaria at the site was taken as positive test.

### 2. Cold water immersion test :

One hand up to the wrist was immersed in cold water (10°c) for 5 minutes and spread or persistence of erythema more than 5 minutes or urticaria at the site was taken as positive.

### 3. Local heat test :

30 mm diameter area of the skin was exposed to 50°c for 2 minutes and observed for any spread of erythema or wheal at the site.

### 4. Intradermal injection of carbochol

0.1 ml of carbochol was given intradermally and an increase in the wheal more than 5 mm diameter area or satellite lesions around were taken as positive.

### 5. Elimination diet :

Suspected cases of food allergy were admitted in the Ward and put on a

bland carbohydrate diet. When urticaria subsided different articles of food was introduced one after the other and watched for urticarial lesions. When the patient developed urticaria with a particular food stuff, it was stopped and watched whether the lesions subsided and confirmed by reintroduction of the same food.

#### 6. Exercises :

Such as cycling for half an hour or climbing the stairs up and down, for 15 minutes etc. were given to some cases of cholinergic urticaria.

Fifty healthy volunteers (medical students and nursing students) were questioned and examined for evidence of atopy and dermatographism.

#### Observations :

Out of 100 cases 56 were males and 44 were females. Maximum cases (82%) belonged to the age group between 11 and 40 years (Table I). Personal history of atopy or family history of atopy or both were present in 26% of the cases and 24% of the controls (Table II). The duration of the illness varied from 1 day to 21 years (Table III). 58 cases were having the duration of illness for less than 2 months (acute cases) and 42 cases were having the duration of illness for more than 2 months (chronic cases).

Table No. I

#### Age and sex distribution

| Age group | Male | Female | Total |
|-----------|------|--------|-------|
| 0-10 Yrs. | 0    | 2      | 2     |
| 11-20 "   | 15   | 18     | 33    |
| 21-30 "   | 27   | 7      | 34    |
| 31-40 "   | 9    | 6      | 15    |
| 41-50 "   | 3    | 5      | 8     |
| 51-60 "   | 2    | 5      | 8     |
| 61-70 "   | 0    | 1      | 1     |
| Total:    | 56   | 44     | 100   |

Table No. II  
Association of Atopy

| History of atopy.                           | No. of urticaria | No. of controls. |
|---|------------------|------------------|
| Personal                                    | 9                | 5                |
| Family H.O. atopy.                          | 11               | 5                |
| Personal and family history of atopy.       | 6                | 2                |
| Total No. of cases questioned and examined. | 100              | 50               |

Table No. III  
Duration of Urticaria

| Duration          | No. of cases |
|-------------------|--------------|
| 1-15 days         | 41           |
| 16 days-1 month   | 9            |
| 1 month-2 months  | 8            |
| 2 months-3 months | 4            |
| 3 months-6 months | 9            |
| 6 months-1 year   | 10           |
| 1-3 Years.        | 4            |
| 3-5 Years.        | 4            |
| 5-10 years        | 6            |
| 10-15 years       | 2            |
| 15-20 years       | 2            |
| 20-25 years       | 1            |
| Total             | 100          |

The lesions were precipitated or exacerbated by drugs in 27 cases, cold in 18 cases, friction and pressure in 16 cases, heat in 11 cases, food in 5 cases and so on (Table IV). In some cases more than one precipitating or exacerbating factors were observed.

The type and distribution of lesions did not suggest any particular etiology. In 8 cases of urticaria due to drugs, we could find swelling of the hands and feet and joints.

**Table No. IV**  
**Precipitating or Exacerbating**  
**Factors.**

| Precipitating or exacerbating factors. | No. of cases. |
|--|---------------|
| Drugs                                  | 27            |
| Cold                                   | 18            |
| Pressure                               | 16            |
| Heat                                   | 11            |
| Food                                   | 5             |
| Exertion                               | 3             |
| Emotional upsets                       | 3             |
| Fever                                  | 2             |
| Dust                                   | 2             |
| Water                                  | 2             |
| Menstruation                           | 1             |
| No precipitating factor                | 32            |

Seven percent of urticaria cases and 6 percent of the controls showed dermographism. On detailed examination and investigations 35 cases showed the presence of one or other focus of infection (Table V) and 39 cases showed the

presence of intestinal parasites (Table VI). Eosinophilia was seen in majority of the cases. 66% of cases showed more than 5% eosinophilis. It was not limited to persons with history of atopy or with the presence of intestinal parasites (Table VII).

**Table No. V**  
**Association of Focus of Infection**

| Focus of infection         | No. of cases |
|----------------------------|--------------|
| Carries tooth              | 14           |
| Tonsillitis                | 6            |
| Pharyngitis                | 2            |
| Orhitis                    | 1            |
| Adenitis                   | 1            |
| Ear infection              | 1            |
| Skin infection             | 4            |
| P. U. O.                   | 2            |
| Urinary tract infection... | 2            |
| Pilarial oedema            | 2            |
| <b>Total</b>               | <b>35</b>    |

**Table No. VI—No. of cases having parasites.**

| Parasite      | Round worm | Hook worm | Whip worm | Round+ Hook+ whip | Round+ whip | Round+ Hook | Giardia | E. Coli | E. His-tolytes | Total |
|---------------|------------|-----------|-----------|-------------------|-------------|-------------|---------|---------|----------------|-------|
| No. of cases. | 10         | 5         | 2         | 2                 | 8           | 3           | 6       | 2       | 1              | 39    |

**Table No. VII—Percentage of Eosinophils in different group**

| Eosinophils   | No. of persons with atopy | No. of persons with parasites | No. of persons with atopy + parasites | No. of persons without history of atopy+parasites | Total      |
|---------------|---------------------------|-------------------------------|---------------------------------------|---|------------|
| 0- 5          | 2                         | 5                             | 3                                     | 14  | 24         |
| 6-10          | 3                         | 12                            | 2                                     | 12  | 29         |
| 11-20         | 2                         | 8                             | 5                                     | 15  | 30         |
| 21-30         | 4                         | 3                             | 4                                     | 3   | 14         |
| 31-40         | 1                         | 2                             | 0                                     | 0   | 3          |
| <b>Total:</b> | <b>12</b>                 | <b>30</b>                     | <b>14</b>                             | <b>44</b>   | <b>100</b> |

Of the 18 cases who gave a history of exacerbation of their lesion with cold only 5 gave positive cold tests (4 by increase in erythema and 1 by development of urticaria at the site of cold test). Cryoglobulins were absent in all cases.

Of the 13 cases who gave history of exacerbation or precipitation of their lesions with heat, exertion or emotional aspects, only 4 gave a positive test to intradermal injection of carbochol and 5 to local heat test.

### Discussion :

Most of the cases in this study were young adults. Only 2 cases were below the age of 10 years. This shows that urticaria is not so common in children. This was also observed by Halpern (1965). The slight increase in the number of male patients, could be explained by the fact that more number of male patients attended the Outpatient clinic than the female patients.

No significant increase in the incidence of atopy was observed in urticaria patients when compared to the controls. Our finding corroborates with that of Carr (1964). He found that the incidence of atopy in general population was about 20 percent.

According to Miller et al (1968) definition of chronic urticaria 58 percent of our cases belonged to the group of acute urticaria and 42 percent belonged to the group of chronic urticaria.

Eventhough 38 cases showed the presence of one or more focus of infection only 8 cases could be proved to be due to the presence of infection.

Similarly, the mere presence of intestinal parasites do not indicate that the urticaria is due to the intestinal parasites. Only one case in which urticaria started along with vomiting of round worms and subsided after deworming

and did not recur or follow up, was grouped as due to intestinal parasites.

Eosinophilia was present in 66 percent of cases. No correlation could be drawn in different groups. (Table VII). This increased eosinophil count may be due to the increased incidence of parasitic infection in this region.

No characteristic clinical features were noted in cholinergic urticaria as suggested by others. (Grant et al 1936 Wrines and Pearson 1959).

Dermographism was observed only in 7 percent of urticaria cases. This shows that there is no significant increase in the incidence of dermatographism in the urticaria cases. This finding corroborates the study of Fisher and Schwartz (1953). They found that the incidence of dermatographism in chronic urticaria patients was about 6 percent and in controls about 5 percent.

On an etiological basis we found, that drugs were the commonest cause of acute urticaria and physical allergy was the most common cause of chronic urticaria. (Table VIII).

The response to antihistamines was favourable in about 90 percent of acute urticaria whereas chronic urticaria responded only temporarily. In 2 cases, lesions started after an injection of penicillin, but later on became chronic. This shows that the lesions could be precipitated by one agent but could be perpetuated by other factors.

### Summary and conclusions :

Out of 100 cases studied, only in 53 percent of the cases we could make an etiological diagnosis. In acute urticaria, drugs were found to be the most common etiological agent; whereas in chronic urticaria physical allergy was found to be the most common factor.

The incidence of atopy and dermatographism is not increased in urticaria patients when compared to controls.

Table No. VIII—Etiology of Urticaria

| Etiology           | No. of acute cases. | No. of Chronic cases. | Total      |
|--------------------|---------------------|-----------------------|------------|
| <b>Drugs :</b>     | 19                  | 1                     | 20         |
| Penicillin         | 12                  | 0                     | 12         |
| Sulfinamide        | 3                   | 0                     | 3          |
| Aspirin            | 2                   | 1                     | 3          |
| Chloromycetin      | 1                   | 0                     | 1          |
| Dilantin sodium    | 1                   | 0                     | 1          |
| <b>Food :</b>      | 4                   | 1                     | 5          |
| Focus of infection | 5                   | 3                     | 8          |
| Parasites          | 1                   | 0                     | 1          |
| Inhalents          | 1                   | 0                     | 1          |
| Cold               | 0                   | 5                     | 5          |
| Cholinergic        | 0                   | 4                     | 4          |
| Pressure           | 2                   | 7                     | 9          |
| Not detected       | 26                  | 21                    | 47         |
| <b>Total</b>       | <b>58</b>           | <b>42</b>             | <b>100</b> |

Acute urticaria responded well to antihistamines whereas in chronic urticaria response to antihistamines were not satisfactory.

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