

Assessing the Effectiveness of *Bovista Lycoperdon* in Treatment of Urticaria

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ABSTRACT

Urticaria, a local dermal inflammation, is a pruritic, oedematous, erythematous condition with blanching papules that are round or oval, with pale raised centres (wheals) on the skin. It is one of the troublesome skin diseases that people are affected with and seek for treatment. Homoeopathy offers effective treatment for acute, chronic, and recurrent urticaria by correcting the underlying disturbed immune system and, hence, treating the disease at a deep level. In homeopathy, many efficient remedies are present to help treat urticaria. *Bovista Lycoperdon* is one such important remedy that is very useful in urticaria, effecting the whole body with immense itching. In this study, 20 patients with a clinical history of urticaria were selected and given *Bovista lycoperdon* and the results showed that 35% of the participants showed marked improvement and another 35% of the participants showed moderate improvement.

Keywords: *Bovista lycoperdon*, homoeopathy, urticaria.

INTRODUCTION

Urticaria is a hypersensitivity reaction caused by either external or an internal cause. The sign and symptoms sometimes may annoy the patient to a great extent and leads to both mental and physical disturbance.¹

Urticaria is a Latin word derived from "Urtica" means nettle.² It is also known as Hives or Nettle rash. Nettle is a common wild weed prevalent in Europe. It is a widespread condition characterized by intense itching.³ It appears on the body as a red, raised and itchy skin rash. The wheals of urticaria usually look like Nettle stings and may be of different shapes and sizes. One noteworthy aspect of urticaria is that, even though the rash could last for several weeks, individual lesions typically go away in a day.⁴ In Homeopathy many efficient remedies are there which treat Urticaria. *Bovista* is also one such important remedy that is much Useful in urticaria covering whole body with much itching.

LITERATURE REVIEW

DEFINITION:⁵

Urticaria is defined as a skin lesion consisting of a wheal-and-flare reaction where the localized intracutaneous edema (wheal) is surrounded by an area of redness (erythema) that is typically pruritic. Individual lesions last for 30 minutes to 36 hours. They range from 1 millimeter or 6-8 inches in diameter (giant urticaria). They blanch with pressure as the dilated blood vessels are compressed, which accounts for the central pallor of the wheal.

Wheals, also known as 'nettle rash' or hives are a transient, well-demarcated, superficial erythematous or pale swelling of the

dermis, very itchy and are associated with surrounding red flare.

Angio-oedema, also called angioneurotic oedema, is a swelling of the deeper dermis subcutaneous and submucosal tissues. They are painful rather than itchy, poorly defined, and pale or normal in colour.

Anaphylaxis- a severe, acute, life-threatening, systemic or generalized hypersensitivity reaction consisting of a combination of symptoms and signs, including diffuse erythema, pruritus, urticaria and angio-oedema, hypotension, and difficulty in breathing.

EPIDEMIOLOGY:

Urticaria affects 15%-20% of the population. Urticaria is a common problem, with a point prevalence of 0.1%.⁶ Lifetime prevalence of chronic urticaria varies from 0.05% to 23.6% in the general population, but a range of 1-5% seems more realistic. Overall, urticaria is more common in women, with a female: male ratio of approximately 2:1 for chronic urticaria.⁷ Urticaria affects people of all age groups, but usually those in the second and third decade of life. Hereditary angioedema has an autosomal dominant inheritance pattern and occurs in approximately 1:150 000.⁸

Lifetime prevalence for urticaria is reported as 7.8%-22.3%. Approximately 4-33% of cases are reported to be physical Urticaria, and 1-7 percent of cases are cholinergic. The precise incidence in India is unknown. Urticaria affects people of all age groups but usually those in the second and third decade.⁶ In young adults of both sexes, acute urticaria are common and chronic urticaria are more common in women.⁹

ETIOLOGY: ⁹

Exact cause of urticaria is Unknown. There are some factors which may be responsible for the development of urticarial rashes are as follows

Causes: ¹⁰

1. Infections/ infestations: -

- Viruses – adenovirus, enterovirus, Epstein–Barr virus, cytomegalovirus
- Bacteria– Streptococci, mycoplasma pneumonia, Staphylococci, Helicobacter pylori, Escherichia coli.
 - Parasites and Parasitic infestations – *Blastocystis hominis*, *Plasmodium falciparum*, and strongyloidiasis, giardiasis and amoebiasis etc.
- Fungal infections -including onychomycosis, tinea pedis and candida

2. **Drug Hypersensitivity:** antibiotics and non-steroidal anti-inflammatory drugs responsible for childhood acute urticarial, Aspirin, (alcohol, narcotics (codeine, morphine) and oral contraceptives may exacerbate chronic urticaria.

3. **Food allergy:** Symptoms appear in less than an hour. Food hypersensitivity is mainly due to coloring agents and preservatives, monosodium glutamate and sweeteners. Common urticogenic foods are- milk, chocolate, cheese, eggs, wheat, peanuts, tree nuts, seafood and shellfish, fish tomatoes.

4. **Systemic and auto-immune diseases:** Type I diabetes mellitus and coeliac disease, rheumatic disorders, neoplasm, hypothyroidism (Hashimoto's thyroiditis) or hyperthyroidism (Graves' disease), Juvenile idiopathic arthritis, systemic lupus erythematosus.

5. **Environmental allergens:** Dust mites, molds and animal dander, Grass pollens, spores, house dust and even tobacco smoke.

6. **Insects:** mainly mosquitoes, bees, and spiders.

7. **Physical urticaria:** Heat, cold, scratching, pressure, and vibration are all examples of physical stimuli that cause urticaria. Dermatographism is the most common physical urticaria.

8. **Idiopathic causes:** Most chronic urticaria are idiopathic.

9. **Psychogenic factors:** Depression and anxiety were found frequently in chronic urticaria

PATHOPHYSIOLOGY :⁹

Mast cells could be the main cause of urticaria. The mast cells degranulate with release of histamine which causes wheals and angioedema. It is formed by an increase in permeability of capillaries and venules. These angioedema and wheals, are dependent on the activation of mast cells.

IMMUNOLOGIC URTICARIA: -

IgE dependent antigen bonds to IgE on the mast cell surface causing degranulation. Which results in release of histamine.

Histamine bonds to H1 and H2 receptor to cause arteriolar dilatation, venous constriction and increase capillary permeability.

NON-IMMUNOLOGIC URTICARIA: -

Not dependent on the binding of IgE receptors. For example, Aspirin may induce histamine release through a pharmacologic mechanism where it effects on arachidonic acid metabolism. These physical stimuli may induce histamine release through direct mast cell degranulation.

Histopathologically urticaria is an inflammatory reaction which contain of CD4+ and CD8+, T- lymphocytes, eosinophils, basophils and neutrophils.

CLINICAL FEATURES :⁹

Onset-Sudden and unexpected but sometimes there is history of viral infection, immunization, drug therapy (aspirin, penicillin) or any type of food allergy (fish, fruits, nuts) may be at hand .⁹

Sites- Wheals may occur on any part of the body (from scalp to the soles of feet) exp- In solar urticaria, lesions are found on sun exposed parts.⁹

Symptoms: - 11

Itchy, erythematous pale to pink, edematous, raised areas of the skin are present with a surrounding red flare. They occur anywhere on the body, in variable numbers and sizes, ranging from a few millimeters to large lesions, of varying shapes like annular, rounded, serpiginous and bizarre patterns.

Bullae may occur in rare cases of severe oedema. Weals persist for a few hours and disappear within 24 hours, leaving the skin looking normal. They are generally very itchy, and Patients tend to rub rather than scratch, soexcoriation marks are unusual, but occasionally bruising may result, which may be seen particularly on thighs. Weals may be more pronounced in the evenings or during pre-menstrual period. There may be associated angio-oedema in 50% of patients with ordinary urticaria. Urticaria may be associated with systemic symptoms malaise, loss of concentration, low mood, feeling hot and cold, headache, abdominal pain or diarrhea Vomiting's, dizziness.

Morphology– The lesions begin as erythematous macules that develop into pale pink edematous wheals rapidly. Large lesions may be annular/ arcuate with paler centre.⁹

Number and size– Number and size of wheals is variable. Pin point wheal is characteristic feature of cholinergic urticaria whereas small and large wheals are found in cold urticaria.⁵They may occur in size from <1 to many centimeters across or coalesce.⁹

Shape– It can be circular, annular, arcuate, or serpiginous. Linear wheals are found in dermographic urticaria. The shape also varies, round, polyclinic overlapping circle, geographic (like a map).¹²

Evolution– Wheals of urticaria last a few hours to 24 hours or beyond 24 hours and disappears spontaneously leaving behind normal skin (no pigmentation, no scaling/atrophy)⁵ but new lesions may appear soon as old lesion fades away ⁵ example – wheals of cholinergic urticaria subside within few minutes.⁹

INVESTIGATION:⁵

● Initial work up-

History taking:

- ✓ Time of onset
- ✓ Duration of urticaria (acute or chronic)
- ✓ Duration of individual lesion
- ✓ Enquiry for food, food additives, drugs, infection

- ✓ Enquiry for home and work environment
- ✓ Family history of autoimmune diseases
- ✓ History of atopy
- ✓ History of dental diseases.

● **Physical examination:**

- ✓ Morphology of lesion (small papules, plaques, combination of lesions, thickness of lesions)
- ✓ Distribution (generalized, localized, sun exposed area of skin, other sites)
- ✓ Tests for physical urticaria (exercise, ice cube test, stroke)
- ✓ Features of systemic involvement (fever, arthralgia)
- ✓ Evidence of any infection clinically (periodontal disease, sinusitis, cystitis, vaginitis).

Laboratory work up and special tests⁵

Initial screening tests:⁵

CBC, DC, ESR, platelet count, LFT, T4, TSH, Urinalysis,

Complete Blood Count: Eosinophilia in parasitic infection or drug cause.

- Total Eosinophil Count: elevated in allergic reaction.
- Erythrocyte Sedimentation Rate (ESR): elevated in vasculitis.
- Liver Function Tests, Iron Studies, urea, electrolytes, thyroid function tests: help in finding out the underlying systemic disorder.
- Total IGE and Specific IGE to Possible Allergens: e.g., shellfish, peanut, house dust mite.
- Antinuclear Factor: positive in SLE, urticarial vasculitis
- Skin Biopsy: if urticarial vasculitis is suspected.
- Challenge Tests: to confirm physical urticarias
- The autologous serum skin test (ASST) 35- for detection of basophil histamine releasing activity with 65-71% of sensitivity and 78-81% specificity
- Prick test- performed for suspected foods, food additives along with allergy to dust, mites, fungi and epithelia it is most convenient and least expensive method of

allergy testing and result could be obtained in an hour. It helps to trace out type 1 (immunoglobulin E) mediated hypersensitivity specifically.⁹

The following pattern should be observed before treating the patient-¹²

- First onset of CSU (life events?)
 - Frequency, severity, duration and localization of wheals; size and shape
 - Relevance of symptoms with time of day, day of week (weekend?), season (vacation?), menstrual cycle
 - Presence of subjective symptoms of lesion (itch, pain), systemic manifestations or angioedema,
 - Family history of urticaria
 - Previous or current systemic illnesses, intolerances, allergies
 - Psychosomatic and psychiatric diseases
 - Surgical implantation and events during surgery
 - Gastric or intestinal problems (stool, flatulence)
 - Possible precipitating factors (physical stimuli, exercise, stress, food, medications)
- Use of medications (NSAIDs, injections, immunizations,
- hormones, ear and eye drops, laxatives, alternative remedies)
 - Personal and social status, occupation, free-time activities, smoke & alcohol use,
 - Quality of life impairment, emotional impact
 - Therapies that have been used, response to treatment

MANAGEMENT:

■ **Conventional treatment:⁹**

- Cooling lotions (e.g. calamine, 0.5% menthol in aqueous cream)
- Uses of non-sedating antihistamine drugs such as loratadine, cetirizine, levocetirizine etc.
- Uses of sedating h1 antihistamine such as chlorpheniramine or diphenhydramine at night for those

patients who don't give response easily for non-sedating histamines.

- Oral steroids in recalcitrant urticaria.
- Immunosuppressants (methotrexate, azathioprine and cyclosporine)
- Patient with a history of life-threatening anaphylaxis as in peanut or wasp sting allergy, carry adrenaline (epinephrine) injection kit.

■ General Measures :⁵

Advice and inform patients about common precipitants Aggravating factors hinted at by history (e.g., stress, alcohol, cold exposure, and heat) and the different triggers for physical urticarias should be explained to them. Clear information and advice on preventive measures (e.g., covering exposed skin in cold urticaria, and a cooling shower for cholinergic urticaria) should be provided. Avoidance of aspirin and other NSAIDs, which aggravate chronic urticarial like calamine or 1% menthol in aqueous cream may help relieve pruritus.

HOMOEOPATHIC CONCEPT OF ALLERGIC DISORDERS – URTICARIA

Hypersensitive allergic disorders include a variety of clinical disorders such as urticaria, asthma etc. some patients have allergic reaction towards some food stuffs, smell, drugs etc. they may produce urticaria like symptoms.¹ Dr. Samuel Hahnemann has also noted his view regarding allergic disorders, urticaria in organon of medicine VI edition aphorism 117. In this part he emphasizes about idiosyncrasy. He says that it is a peculiar corporeal constitution which although otherwise healthy possesses a disposition to be brought into more or less morbid state by certain things which seem to produce no change in many other individuals. But this inability to make an impression on everyone is only apparent. Dr. Kent also says about this in lectures. He says idiosyncrasy is over sensitiveness to one thing or few things.¹³

Allergies always represent a disharmony, demonstrating a difficulty for the patient to

adapt to the world around them. It is negative exaggerated response of tissue to antigen or hapten. Dr Hahnemann said, "There are no diseases, only sick people", Homoeopathic specific medicine for all patients of the same diagnosis, it treats the patient individually. As regards the cause of disease Dr. Hahnemann grouped causes into three categories: exciting cause (for acute disease), maintaining cause (causa occasionalis, which must be eradicated where it occurs in chronic disease) and fundamental cause (which is generally due to chronic miasm) (Aph5, 7). Patient's personal history like age, mode of living, diet, occupation, domestic circumstances, social relations etc, are very important factor. It not only helps us to know the patient completely but also helps to know the cause of disease and many other factors which maintain the disease (exciting or maintaining cause) as well as for the selection of homoeopathic medicine (Aph 208).^{9,14}

Giving indicated homoeopathic medicine, eliminates exciting and maintaining cause bringing the patient back to the state of cure. Urticaria is simply an indication of an internal immunological disorder. Hives or eruptions on the skin occur as a result of the immune system's inner war or hypersensitive reaction. When treating urticaria, the goal should not be to just relieve the rash, itching, swelling, or pain. It should be repaired inside by addressing the immunological disruption at the deepest level. This can be accomplished through homeopathic treatment, which operates on a similar premise. Homeopathic treatment not only improves symptoms but also addresses the underlying cause of urticaria by restoring immune system disturbance. Homeopathy therefore aims to remove the individual predispositions that caused the allergies.^{13,14} In Homeopathy many efficient remedies are there which treat urticaria. Bovista is also one such important remedy that is much useful in urticaria covering whole body with much itching.

Bovista lycoperdon

According to the materia medica, Bovista Lycoperdon has the following relevant characteristics:

Urticaria on excitement, with Rheumatic lameness, palpitations and diarrhea. Urticaria covering nearly whole body, some blotches nearly two inches in diameter. Rashes with burning and itching. Itching especially when the body is warm and at that kind which receives no relief from scratching urticaria on waking in the morning, it is worse from bathing. Itching on getting warm.^{15, 16, 17}

MATERIALS & METHODS

- **SAMPLE SIZE-** 20 study subjects will be included in this study who fall in the age group 15-50 years of both sexes. 20 cases were taken from the patients attending the outpatient and inpatient sections and camps in MNR Homeopathic Medical college and Hospital, also people living in and around Sangareddy region. Medicine prescribed on the basis of principles of Organon of Medicine and potency, repetition is adjusted according to susceptibility and requirement.
- **MATERIAL-** Bovista lycoperdon medicine of different potencies taken from Homeopathic pharmacy.
- **METHODS-** Patient diagnosed with Urticaria based on clinical history 20 Patients with clinical history of urticaria of 15-50 years age group are selected and they are assessed by using a urticaria activity score (USA) Tool. Based on the score the severity of Urticaria is known and Depending on the susceptibility of patient a proper dose of Bovista is given. Then patient is asked for a follow up after 7 days The final results is analysed using analytical and statistical tools.
- **INCLUSION CRITERIA: -**
 - 1) Diagnosed and undiagnosed cases of urticaria only 15-50 years of age group will be included in the study irrespective of their sex, caste, region and duration of illness cases which came to OPD/IPD or

people living in and around Sangareddy region.

- 2) The Patient who are fairly articulate
- 3) The patient who have given their consent and were willing to participate in study with minimum 3-4 follow ups.

- **EXCLUSION CRITERIA: -**

- 1) The cases which do not fulfil the inclusion criteria
- 2) Pregnant or breastfeeding
- 3) Immuno- compromised individual (HIV, AIDS)
- 4) Cases with other systemic disorder and complications Age and Sex of Patients of age group 15 to 50 years of both sexes were selected from OPD / IPD of MNR Homeopathic Medical College and hospital.

- **SELECTION OF TOOLS: -**

- (i) Case study proforma
- (ii) Library
- (iii) Organon of Medicine
- (iv) Materia Medica
- (v) Encyclopaedia (as necessary)
- (vi) Electronic search tools (as necessary)
- (vii) Cases of Urticaria used
- (viii) Assessment scales: Self Developed Urticaria Symptoms Scoring Index.

- **PLACE OF WORK:** MNR Homeopathic Medical College and hospital Record of work: Case taking proforma as per Organon of Medicine and the topic of dissertation and other records were duly maintained with confidentiality.

- **REMEDY SELECTION:** Bovista was pre-selected as per my project remedy & prescribed according to the symptoms similarity. Placebo: Placebo was prescribed as indicated in Organon of Medicine.

- **SOURCE OF REMEDY:** Pharmacy of MNR Homeopathic Medical College and hospital.

- **REMEDY APPLICATION:** Potency selection, application and repetition of

medicine were done according to the case and project work.

STATISTICAL ANALYSIS

After collection and presentation of the patient’s data, analysis of data is the next important step. To draw the valid conclusion, analysis of the collected data is done below with the use of statistical methods to put into a scientific parameter.

As the sample size is not more than 20, “Z-test” is not applicable.

So, the obtained data is subjected to Paired “t-test”.

Marks are given basing on the improvement in each case.

- 1 = Marked Improvement
- 2 = Partial Improvement
- 3 = No improvement, and also dropped.

Paired t test results: P value and statistical significance:

The two-tailed **P value is less than 0.0001**
 By conventional criteria, this difference is considered to be **extremely statistically significant**.

Confidence interval: The mean of before minus after equals 1.15, 95% confidence interval of this difference: From 0.77 to 1.53
 44

Intermediate values used in calculations:

t = 6.3280

df = 19

Standard error of difference = 0.182

Group	Before	After
Mean	3.00	1.85
SD	0.00	0.81
SEM	0.00	0.18
N	20	20

Table 1: Review of data for statistical analysis

RESULT
DISTRIBUTION OF CASES
ACCORDING TO AGE

S.NO	AGE	CASES	PERCENTAGE
1	15-25	6	30%
2	25-35	7	35%
3	35-45	5	25%
4	45-55	2	10%

Table 2: distribution of cases according to age

Out of 20 cases studied 35% (7 cases) are between the age group 25-35, 30% (6 cases) are between the age group 15-25 years, 25% (5 cases) are between the age group 35-45 years, 10% (2 cases) are between the age group 45-55 years. The maximum prevalence was noted in age group 25-35 years i.e. 35%.

DISTRIBUTION OF GENDER AMONG THE PARTICIPANTS

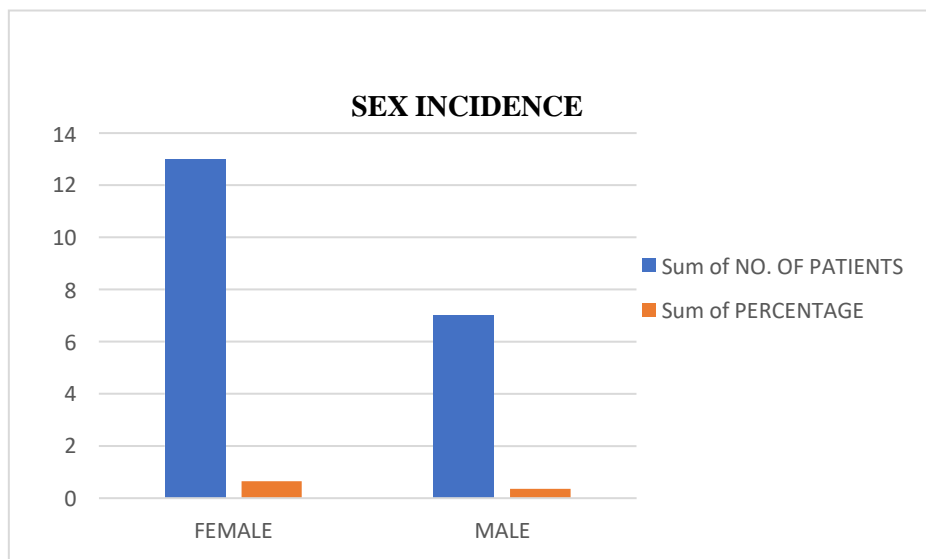


Figure 1: distribution of gender among participants

Out of 20 cases studied, 13 were female i.e.,65% of patients are female. 7 cases weremale i.e., 35% of patients are male. So, females are more prone to urticaria

POTENCY PRESCRIBED FOR PARTICIPANTS

S.NO	POTENCY	NO. OF CASES	PERCENTAGE
1.	30	5	25%
2.	200	15	75%

Table 3: number of cases to the potency used

Out of 20 cases, 25% (5 cases) are given 30 potency, 75% (15 cases) are given 200 potency according to susceptibility of patient.

DISTRIBUTION OF CASES ACCORDING TO IMPROVEMENT

S.NO	REMARKS	CASES	PERCENTAGE
1	MARKED IMPROVEMENT	7	35%
2	PARTIAL IMPROVEMENT	7	35%
3	NO IMPROVEMENT/ DROPPED	6	30%

Table 4: distribution of cases according to improvement

A significant improvement in the condition was seen in 35% of the patients and another 35% of the patients showed good improvement indicating the effectiveness of Bovista in treating urticaria.

DISTRIBUTION OF IMPROVEMENT SCORES BEFORE AND AFTER TREATMENT

Sl.no	Before Treatment(X1)	After Treatment(X2)	Difference (X1-X2=x)	Square ($\sum x^2$)
1	3	1	2	4
2	3	1	2	4
3	3	2	1	1
4	3	1	2	4
5	3	3	0	0
6	3	1	2	4
7	3	3	0	0
8	3	2	1	1
9	3	2	1	1
10	3	1	2	4

Table 5: Distribution of improvement scores before and after treatment

Paired t test results:

The two-tailed P value is less than 0.0001
By conventional criteria, this difference is considered to be extremely statistically significant.

DISCUSSION

The subjects of the study were selected from the patients with urticaria who attended the OPD, IPD, Camps and peripheral health centres of MNR Homoeopathic medical

college and Hospital, as per the inclusion criteria. The subjects for this study have been selected from both sexes falling under the age group of 15 – 50 years. A total of 20 cases were recorded according to the guidelines given in organon of medicine written by Doctor Samuel Hahnemann and the medicine Bovista prescribed in different potency respectively according to their susceptibility and they were put in observation, frequent follow ups were to

assess the improvement. Pretreatment and after treatment scores were calculated and then paired T test was applied to those value in order to test the level of significance. This study was conducted to know the effectiveness of Bovista in treating urticaria. Based on the analysis of 20 cases of urticaria, following observations are made: AGE: Out of 20 cases studied 35% (7 cases) are between the age group 25-35, 30% (6 cases) are between the age group 15-25 years, 25% (5 cases) are between the age group 35-45 years, 10% (2 cases) are between the age group 45-55 years. The maximum prevalence was noted in age group 25-35 years i, e. 35%. SEX: Out of 20 cases studied, 13 were female i.e., 65% of patients are female. 7 cases were male i.e., 35% of patients are male. So, females are more prone to urticaria. POTENCY: Out of 20 cases ,25% (5 cases) are given 30 potency, 75% (15 cases) are given 200 potency according to susceptibility of patient. REMARKS: Out of 20 case, 35% (7 cases) has marked improvement, 35% (7 cases) has partial improvement, and 30% (6 cases) has no improvement / dropped. The p value obtained after paired t test is less than 0.0001 which is statistically significant proving the effectiveness of Bovista in treating urticaria

CONCLUSION

Urticaria is a hypersensitivity reaction caused by either external or an internal cause. The sign and symptoms sometimes may annoy the patient to a great extent and leads to both mental and physical disturbance. The purpose of this study was to determine how well Bovista treats urticaria. Thus, Bovista was prescribed at varying potencies based on the individual's susceptibility, and they were observed. Regular follow-ups were conducted to evaluate any progress. To determine the degree of significance, the pre-treatment and post treatment scores were computed, and the paired T test was then applied to those values. On the basis of the examination of 20 urticaria cases, Thirty percent (6 instances) have no improvement or have dropped out of the twenty cases,

while thirty five percent (7 cases) have shown moderate improvement and another 35% cases showed mild improvement. This shows that Bovista is effective in treating urticaria.

Declaration by Authors

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