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Study to see the effectiveness of Alumina in the indicated cases of hand dermatitis

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Abstract

Dermatitis is the most frequent disorder, as well as the most common occupational skin disease in which hands get affected. Dermatitis or Eczema of the hands is frequently a persistent, complex condition. It is frequently connected to one's job or daily activities at home. It's tough to pinpoint the exact cause of the condition. Despite its importance in dermatology, very few Indian studies investigating the epidemiological patterns, causation, and treatment options for hand eczema have been conducted to date. The genesis and morphology of hand dermatitis are discussed in this article, as well as the documented therapeutic usage of Alumina homeopathic medicine in warranted situations. The necessity of identifying the etiological factors is critical since avoiding or eliminating these factors might help with treatment.

Keywords: Hand dermatitis, therapeutically indicated cases of Alumina, etiological factors

Introduction

Hand dermatitis affects the palms and soles of the hands and can be difficult to distinguish from atopic dermatitis, allergic contact dermatitis, and psoriasis, and all these conditions affect the hands [1]. Hand Dermatitis is a common occurrence that affects people in a variety of professions. Endogenous and external/environmental factors, acting singly or in combination, could all have a role in the development of this illness. Dermatologists defined various morphological forms of hand eczema in the 19th century, including dermatitis solare, rubrum, impetiginoides, squamosum, papulosum, and marginatum [2]. The term Hand Dermatitis is the term which is mostly confined to the dermatitis {i.e inflammation of the skin} of the hand.

Epidemiology

The International Contacts Dermatitis Research group found out in a patch test which was conducted on 4825 patients that hands alone were affected in 30 percent of females and 36 percent in males [3].

In several investigations, the incidence of hand eczema was found to be 10.9-15.8% [15, 4], while hand involvement was seen in two-thirds of allergic contact dermatitis patients in Indian dermatologic outpatient departments [5, 6].

Exogenous and endogenous factors both play key roles in the manifestation of hand dermatitis, which is a very apparent disorder associated with intense itching or pain and has serious effects on the affected individual, including a high psychological impact [7].

Hand Dermatitis can be caused by other cutaneous illnesses, such as atopic dermatitis, or it can happen on its own. Childhood eczema, female sex, occupational exposure, atopic mucous membrane symptoms (rhinitis or asthma), and a service career have all been linked to an increased chance of developing eczema [8]. Widespread hand involvement, early age of onset, history of childhood eczema, and contact allergy are all poor prognostic markers for hand eczema. Determining the causes of the ailment, achieving an accurate diagnosis, long-term hand protection practices, and early, thorough, and when needed internal treatment are all essential components of successful treatment.

Pathogenesis

Irritant contact dermatitis is a skin disorder caused by a direct skin damage. Any agent capable of causing cell damage in any individual if applied for a long enough time and in a high enough concentration is considered an irritant.

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Irritants injure the top epidermis by breaking or eliminating the protecting layers. They denature keratin, eliminate lipids, and change the skin's ability to hold water. The epidermis's underlying live cells are damaged as a result [9].

Causes

Strong irritants cause an immediate reaction after only a few seconds of contact, and the diagnosis is typically clear. Weak irritants require long-term exposure, possibly years, to produce dermatitis, which mainly affects the hands and forearms. Detergents, alkalis, solvents, cutting oils, and abrasive dusts are some of the most typical offenders. Susceptibility varies widely, with those with very dry or fair skin being particularly vulnerable. Atopic dermatitis, whether past or present, doubles the chance of developing irritating hand eczema.

In a study of patch testing in hand eczema by Kishore *et al.* [10], positive patch tests were seen in 82 percent of the patients, which was a high percentage when compared to other studies. Potassium dichromate was the most common sensitizer, with 26 percent of patients testing positive, followed by nickel with 18 percent of patients testing positive. Potassium dichromate's high positive was explained by its occurrence in detergents and cements.

In a study of 71 patients conducted by Bajaj, soaps and detergents were found to be the second most common sensitizers in females [11]. These findings were also observed in another study conducted by Singh and Singh [12], who concluded that detergents are responsible for both irritant and allergic contact dermatitis.

Sign and Symptoms

This disease can be triggered or aggravated by prolonged, excessive contact to water and chemicals. It can cause dryness and cracking of the skin of the hands, as well as erythema and oedema in varying degrees.

Hand eczema comes in a variety of forms that differ only clinically, not histologically. Hyperkeratotic (i.e., psoriasiform or tylotic), frictional, nummular, atopic, pompholyx (i.e., dyshidrosis), and chronic vesicular hand dermatitis are some of the clinical forms of hand dermatitis that have been documented. There are hybrids of these patterns, and some experts disagree on how to classify them [13].

Diagnosis

Though hand dermatitis is easily diagnosed, it can be difficult to distinguish it from other dermatological conditions such as psoriasis, tinea manuum, lichen planus, pityriasis rubra pilaris, and palmar pustulosis.

Hand dermatitis requires a thorough history that includes general medical state, dermatitis start, progression, and remission, work/job history, other exposures, family history, and clinical examination. Standard patch testing, total and differential leucocyte counts evidencing eosinophilia, serum IgE level, skin biopsy, prick test, potassium hydroxide preparation, fungal and bacterial cultures, Gram staining, radioallergosorbent test (RAST), and in vitro lymphocyte stimulation test are all important investigations for confirming allergic contact dermatitis [14].

Preventive Measures

High-risk groups should be identified and informed, including people with a history of atopic dermatitis, hairdressers, health-care professionals, food handlers, and those who work with solvents and cutting oils [15, 17]. Hand

eczema is a work-related condition that can be reduced through occupational screening and education. Hazardous substances, their attributable risk, and exposure reduction should all be addressed during an occupational screening evaluation [16, 18].

Dermatitis is exacerbated by long periods of damp work, low humidity, and hard water [17].

Therapeutics of Alumina

Skin that is cracked and dry. Nails that are brittle Itching that is terrible when becoming warm in bed. It is necessary to scratch until it bleeds, after which it becomes painful. Fingers have brittle skin. Worse in the afternoon, better in the morning after waking up, warm room from cold washing in the evening. Weather that is more moist is preferable [18, 19].

Eruptions itches and bleeds after scratching, chapped skin. If there is slight injury to the skin it smarts and get inflamed. [19] As the body gets warm in bed it starts to itch which is intolerable, due to which the patient scratches till the skin starts bleeding and then the conditions becomes more painful. Eruptions are dry [20], complaints gets worsen in evenings [20, 21]. Cold weather increases the sufferings of the patient, wet weather sometimes ameliorates the sufferings [23].

Material and Methods

A clinical trial was conducted on therapeutically indicated 20 patients of Alumina who had hand dermatitis.

In the trial two groups were made containing 10 patient each.

Group A: In this 10 patients were given alumina 200

Group B: In this 10 patients were given placebo

Pilot study was conducted on 20 patients of hand dermatitis, both male and female age between 20yrs to 40 yrs. They were given *alumina 200* along with placebo for a period of two months.

Criteria of inclusion of patient

1. Patient between age group 20-40 yrs of age.
2. Patient in which alumina was indicated on the basis of appearance and sign and symptoms.
3. Patient who were not suffering from any systemic disorder.

Exclusion criteria of patient

1. Those patient in which there was bleeding from hand.
2. Patient who had taken allopathic medicine for hand dermatitis previously.

Project site: Proposed study has been conducted in the opd of Kulsum clinic, Akola, Maharashtra

Duration of study: 2 months

Processing of medicine – medicine was dispensed from the OPD of Kulsum clinic, Akola, Maharashtra

Observation and Results

Table 1: Showing age group A

Patient's age	Number of patients
20-30 years	4
20-40 years	6
Total	10

Table 2: Showing age group B

Patient's age	Number of patients
20-30 years	3
20-40 years	7
total	10

Table 3: Showing sex of patient in group A and B

Sex of patient	Group a	Group b
Male	4	5
Female	6	5

Table 4: Showing observation after administration of medicine and placebo in both the groups:

Complaints	Group A	Group B
Itching of Hand	No itching in 7 patient	Itching present on and off in all 9 patient
Dryness of Hand	No dryness seen in 6 patient. In 3 patient dryness was much less as it was earlier. And in 1 patient no change.	Dryness as it is, no change
Roughness of Hand	5 patient roughness was reduced.	No improvement in roughness of hand.
Cracks in Hand	In 6 patients cracks were reduced in its size and appearance.	No change in appearance and size of cracks.
Erythema	Reduced in 4	No change in erythema.

Table 5: Showing result

Result	Group A	Group B
Improvement	7	00
No Improvement	3	10

Discussion

In group A

10 patient were given alumina 200, two times a day for 3 days and sac lac for 7 days, this was repeated for 2 months. Patient were advised to maintain proper hygiene, patient who are involved in irritant works were advised to avoid those substances, women's were advised to use gloves while doing household works, and every patient was advised to apply coconut oil over the affected area. They were follow up after every 7 days.

The patient in every follow up showed improvement in symptoms, itching was present in every patient after administration of medicine it got initially reduced, and at the end of two months 7 patients were free from itching.

In 6 patient dryness of hand was curd and in 3 it was less, roughness of hand in 6 patient it was reduced. In 6 patient there cracks were healed and in 4 it size and appearance got reduced, whereas the erythema in 4 patient it was reduced.

In group B

10 patient were given sac-lac two times a day for 7 days and it was repeated for 2 months in regular follow up of 7 days. Patient were advised to maintain proper hygiene, patient who are involved in irritant works were advised to avoid those substances, women's were advised to use gloves while doing household works, and every patient was advised to apply coconut oil over the affected area.

In the follow ups patient had no improvement in itching it was present off and on, similarly there was no improvement in dryness of hand, roughness and erythema. The condition of the patient did not go poor but it didn't improved too.

Conclusion

Patient in group A who were given alumina, along with they were told to maintain proper hygiene and avoid irritants and apply coconut oil, in them 7 patient initially showed improvement in sign and symptoms. Patient in group B who were given placebo, along with they were told to maintain proper hygiene and avoid irritants and apply coconut oil, in them there itching was off and on and other symptoms were

also present, but there condition did not went worse.

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