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Original Research Article

Expert opinion on the prescription practice of topical calamine lotion for chronic urticaria and other dermatologic conditions in Indian clinical settings

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ABSTRACT

Background: Calamine is suggested as a potentially effective treatment for skin exudation, itching, and rashes. However, there aren't many thorough analyses of the drug prescription patterns for treating urticaria in the Indian literature. This study aimed to gather expert opinions on the prescription practice of topical calamine lotion for chronic urticaria and other dermatologic conditions in Indian clinical settings.
Methods: The cross-sectional questionnaire-based survey, comprising 25 questions, gathered data regarding the prescription practice of topical calamine lotion for the management of chronic urticaria and other dermatological conditions.
Results: Of the 467 participants, 62% indicated that they would prescribe topical calamine lotion for pruritus management. About 39% of the participants preferred the cream formulation of the calamine lotion for treating diaper dermatitis in 11-25% of patients. About 76% of the respondents stated that they would recommend an oral antihistamine along with topical calamine lotion to treat chronic urticaria. For the treatment of pruritus, 44% of the participants preferred menthol in addition to calamine. Sixty-eight per cent of the respondents stated that approximately 5% of those with chronic urticaria need to be treated with calamine and tetrahydrocurcumin. Most specialists (69.38%) preferred using calamine lotion on 5-10% of patients with itchy skin conditions during pregnancy.
Conclusions: Experts recommend the topical calamine lotion for managing various skin conditions including pruritus and chronic urticaria. Specialists recommended it as a safe option for managing itchy skin conditions during pregnancy.

Keywords: Skin diseases, Calamine, Chronic urticaria, Pruritus, Antihistamines

INTRODUCTION

Urticaria is experienced by 15% to 20% of the general population at some point in their lives.[1] Although most acute urticaria episodes are brief, chronic urticaria can be extremely upsetting and incapacitating for many sufferers. About 30% of urticaria cases progress to chronic disease, whereas the majority are acute.[2] Chronic urticaria can significantly impact health-related quality of life, especially when chronic spontaneous urticaria is accompanied by angioedema and/or chronic inducible urticaria. Severe pruritus and the sporadic development of wheals and angioedema can cause sleep problems, sexual dysfunction, limitations in everyday activities, challenges in employment and sports, interference with family and social life, and can affect patients' performance at work

and school.[3] Chronic urticaria patients are treated by symptom reduction with the least invasive therapy while carefully weighing risks and benefits.

The cornerstone of treatment is the use of antihistamines, either alone or in conjunction with corticosteroid intermittent pulse therapy. A good antihistamine should be rapid in action with fewer side effects. These criteria are met by the second-generation H1 antihistamines, which currently serve as the mainstay of urticaria treatment.[4] Second-generation non-sedating (or less sedating) antihistamines such as cetirizine, levocetirizine, loratadine, and fexofenadine, are typically used to start the treatment.[1]

Calamine lotion consists of zinc oxide, calamine, and other ingredients including glycerine, and sodium citrate, liquified phenol, and bentonite, which belongs to the shake lotion family.[5,6] The aqueous portion of calamine lotion evaporates when it is applied to the skin, resulting in a cooling impact at the application site and providing antipruritic effects.[7,8] According to studies, calamine exhibits astringent, antipruritic, antiseptic, hemostatic, and myogenic properties. Zinc oxide, on the other hand, is known for its astringent, antibacterial, moisturizing, and protective characteristics.[9] Hence, calamine is recommended as a promising option for treating rashes, itching, and skin exudation. There is a lack of comprehensive analyses in the Indian literature regarding the drug prescription patterns for managing urticaria. Therefore, the current survey aims to collect expert opinions and establish baseline information on the prescription habits of calamine lotion for chronic urticaria patients and other dermatologic conditions.

METHODS

The cross-sectional multiple-response questionnaire-based survey carried out from June 2022 to December 2022, included professionals with experience in treating dermatologic diseases.

Questionnaire

The questionnaire booklet titled TIME (topical calamine lotion in the management of utricaria) study was sent to the dermatologists who were interested to participate. The TIME study questionnaire consisted of a total of 25 questions, with the majority focusing on the use of calamine for treating skin diseases. The study was conducted after getting approval from Bangalore Ethics, an Independent Ethics Committee which was recognized by the Indian regulatory authority, drug controller general of India.

Participants

An invitation was sent to leading dermatologists in managing dermatologic diseases in the month of March 2022 for participation in this Indian survey. About 467 dermatologists from major cities of all Indian states representing the geographical distribution shared their willingness to participate and provide necessary data. Those who did not provide consent were excluded. Dermatologists were requested to complete the questionnaire without discussing with peers. Before the initiation of the study, written informed consent was obtained from all the study participants.

Statistical analysis

Descriptive statistics were used for statistical analysis. Categorical variables were represented by percentages. Frequency and percentage distributions for each variable were calculated using Excel 2013 (16.0.13901.20400). Pie and bar charts were constructed for data presentation.

RESULTS

The survey included 467 dermatologists, with approximately 62% of them identifying pruritus as the most common indication for topical calamine lotion. A smaller percentage of respondents stated that topical use of calamine lotion may be needed for itching related to viral infections, miliaria rubra (heat rash), sunburn, urticaria, and varicella (Figure 1).

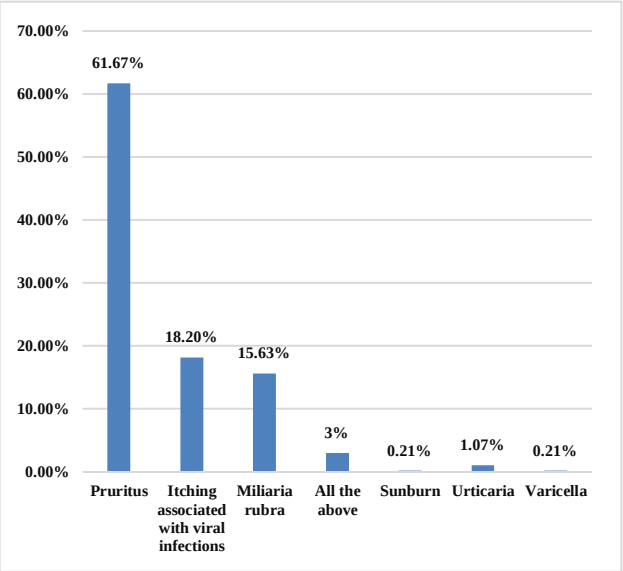

Figure 1: Response to the indications for which topical calamine use is preferred.

About 57% of respondents preferred cream calamine formulations over gel and spray. Approximately 39% of the participants recommended the use of calamine lotion to 11-25% of the patients with diaper dermatitis in routine practice. Around 72% of the respondents recommended using calamine lotion for diaper dermatitis for 4-6 weeks. About 76% of the respondents indicated that they prescribe oral antihistamine combined with topical calamine for the treatment of chronic urticaria (Table 1). Approximately 49% preferred calamine lotion

combined with light liquid paraffin, while 39% favoured pramoxine hydrochloride in combination with calamine lotion (Table 2). Approximately 38% and 31% of the experts expressed a preference for using loratadine and levocetirizine, respectively, in conjunction with topical calamine lotion for the treatment of chronic urticaria (Figure 2).

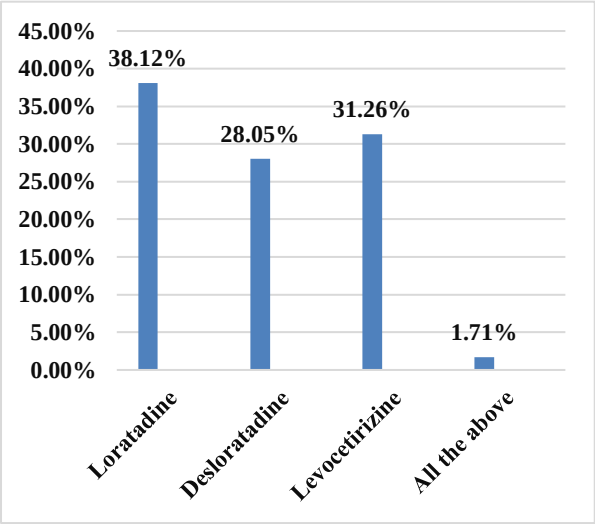

Figure 2: Response to the preference for anti-histamine along with topical calamine in the treatment of chronic urticaria.

Table 1: Response to the preference of administering oral antihistamine in combination with topical calamine to treat chronic urticaria (n=467).

Prescribing oral antihistamine in combination with topical calamine to treat chronic urticaria	Response rate (%)
Yes	356 (76.23)
No	27 (5.78)
Occasionally	68 (14.56)
Rarely	16 (3.43)

Approximately 44% of the participants preferred the addition of menthol to calamine for managing pruritus and around 31% of the experts stated that they would use this combination when necessary (Table 3). The majority (68%) of the respondents indicated that approximately 5-10% of patients with chronic urticaria would require a combination of calamine and tetrahydrocurcumin for the treatment of chronic urticaria (Figure 3). About 39% and 34% of the participants recommended calamine lotion primarily for pruritus during pregnancy based on the need and often. In routine practice, about 5-10% of patients are recommended with calamine lotion for pregnancy-related itching. Approximately 41% of participants recommended using calamine with pramoxine hydrochloride routinely for 11-20% of patients with post-scabies itching. While 37% recommended the occasional use of calamine lotion as sunscreen.

Table 2: Response on the preference for calamine lotion combination (n=467).

Preference of calamine lotion combination	Response rate (%)
Calamine with light liquid paraffin	228 (48.82)
Calamine with tetrahydrocurcumin	50 (10.71)
Calamine with pramoxine hydrochloride	183 (39.19)
All the above	5 (1.07)
Others	1 (0.21)

Table 3: Response to the addition of menthol in combination with calamine for the management of pruritus (n=467).

Response to the addition of menthol in combination with calamine for the management of pruritus	Response rate (%)
Occasionally	207 (44.33)
Rarely	87 (18.63)
Not recommended	30 (6.42)
Based on need	143 (30.62)

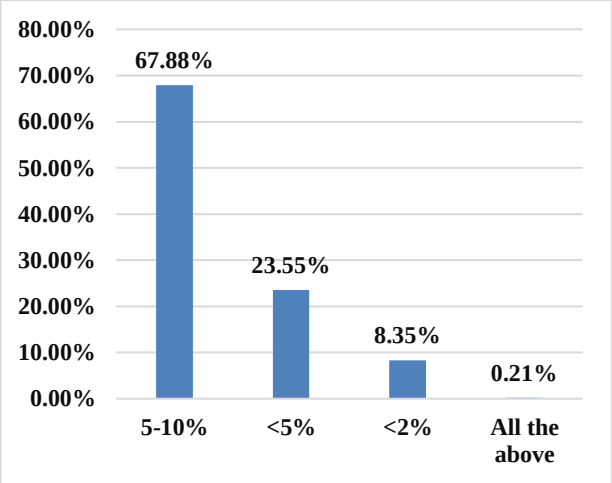

Figure 3: Response on the proportion of patients who require a combination of calamine and tetrahydrocurcumin for the treatment of chronic urticaria.

DISCUSSION

The current survey findings reflect the preferences and practices of healthcare professionals in using calamine lotion for various skin conditions. The majority of the current survey participants (62%) denoted pruritus to be the most common indication that requires the use of topical calamine lotion. Calamine lotion is classified as a skin protectant by the FDA. Its antipruritic effect can be enhanced by adding specific substances that provide keratolytic, antiparasitic, or antifungal properties.[5] A significant number of current survey respondents expressed a preference for adding menthol to calamine lotion for managing pruritus. Menthol, a cyclic terpene

alcohol, induces a cooling sensation and effectively alleviates itching.[10,11] Menthol, camphor, or diphenhydramine can enhance the lotion's antipruritic effect when added to calamine lotion.[10,11] Calamine can be used to treat various dermatoses including acute or subacute edematous, less inflamed dermatoses, eczema, eczema complicated by fungi, lichen planus, pityriasis rosea, sunburn, miliaria, urticaria, insect bites and stings, the excoriated stage of dermatitis herpetiformis, acne vulgaris, and other acneiform dermatoses.[7,12]

A significant proportion of the current participants also preferred calamine lotion for diaper dermatitis for 4-6 weeks duration. The majority of the survey participants preferred cream-based calamine formulations over gel and spray. It is crucial to choose non-irritating excipients, such as non-ionic emulsifiers, and a more inert composition, such as cream gels or glycoside emulsions, for sensitive or reactive skin. The most popular therapy bases for skin conditions are creams and ointments.[13] Patients with atopic dermatitis were found to prefer creams.[14]

In the present survey, experts preferred other combinations of medications along with calamine such as oral antihistamine, tetrahydrocurcumin, loratadine, and levocetirizine to treat chronic urticaria. Depending on the underlying cause of the chronic itching, additional systemic medications may also be used. Tetrahydrocurcumin is well-known for its exceptional antioxidant capabilities and is hypothesized that it may be useful in treating oxidative stress-related illnesses such as skin hyperpigmentation. Research has shown that tetrahydrocurcumin exhibits a strong inhibitory effect on α-MSH (melanocyte stimulating hormone) driven melanin synthesis in melanoma cells.[15]

Menthol and calamine lotion are regarded as safe during pregnancy.[11] In the current study, the majority of the experts recommended calamine lotion for managing itching during pregnancy in 5-10% of patients with skin diseases. According to the necessity, experts most frequently recommend calamine lotion for managing pregnancy-related pruritus. The current survey highlights calamine lotion as a versatile and well-accepted choice in dermatological practice and emphasizes its role in providing relief for various dermatologic conditions, especially chronic urticaria. However, the study's dependence on expert judgment creates the possibility of bias, as various viewpoints and preferences might have influenced the reported results. It is crucial to consider this limitation when interpreting the survey findings.

CONCLUSION

Experts recommend the use of topical calamine lotion for managing pruritus and itchy skin conditions during pregnancy. Oral antihistamines combined with topical calamine lotion are preferred for the treatment of persistent urticaria. Menthol and calamine combination was advocated for the effective management of pruritus.

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