

Hydroxyzine for the Treatment of Patients with Pruritus: An Evidence-based Review

Abha Diwan¹, Ankur Chauhan², Mahendra Nagargoje³, Narendra Kumar Trivedi⁴, Praveen Kumar Rathore⁵, Piyush Gupta⁶, Pradeep Kumar⁷, Punam Caplash⁸, Ravi Shankar Dwivedi⁹, Swami Dass Mehta¹⁰, Tapes Sharma¹¹, Umesh Bhoi¹², Ganesh Sonawane¹³, Rajashekar ML¹⁴, Bhumesh Kumar¹⁵, Senthil G¹⁶, Nilendu Sarma¹⁷, Sanjeev Aurangabadkar¹⁸, Tamal Chakroborty¹⁹, Dharani Durai²⁰, Gautam Datta Gupta²¹, Manjoor Ahmed Seikh²²

¹MBBS, DVD, Jabalpur, Madhya Pradesh, India, ²MBBS, MD, Skin and VD, Ahmedabad, Gujarat, India, ³MBBS, MD (Skin and VD), Pimpri Chinchwad, Maharashtra, India, ⁴MBBS MD, Ujjain, Madhya Pradesh, India, ⁵MBBS, MD (Skin and VD), Bareilly, Uttar Pradesh, India, ⁶MBBS, DDVL, Bharatpur, Rajasthan, India, ⁷MBBS, MD, DVD, Ghaziabad, Uttar Pradesh, India, ⁸MBBS, MD, Ludhaina, Punjab, India, ⁹MBBS, MD, Ranchi, Jharkhand, India, ¹⁰MD, Mohali, Punjab, India, ¹¹MBBS, DVD, New Delhi, India, ¹²MBBS, MD, Kolhapur, Maharashtra, India, ¹³MBBS, DVD, Mahad, Maharashtra, India, ¹⁴MBBS, DDVL, Bengaluru, Karnataka, India, ¹⁵MD- DVL; DCH, Hyderabad, Telangana, India, ¹⁶MBBS Dermatologist, Thanjavur, Tamil Nadu, India, ¹⁷MBBS, MD, Dermatology, Kolkata, West Bengal, India, ¹⁸MBBS, MD, Dermatology, Hyderabad, Telangana, India, ¹⁹MBBS, MD (Skin and VD), Kolkata, Telangana, India, ²⁰MBBS, MD-DVL, Hosur, Tamil Nadu, India, ²¹MBBS, DVD, Berhampore, West Bengal, India, ²²MBBS, DDV, Srinagar, Jammu and Kashmir, India

Abstract

Pruritus is the most common skin symptom that is widely observed in many patients visiting dermatological clinics. It causes an unpleasant sensation on the skin and can sometimes impair patients' quality of life. Antihistamines, which are typically used to treat pruritus, can fail to reduce itching in some patients. Recent evidence has suggested that the use of first-generation anti-histamine hydroxyzine should be considered for treatment of pruritus due to its efficacy and safety. This has been shown to improve patients' quality of life. The current review discusses the efficacy of hydroxyzine in pruritus management and clinical expertise of different experts in dermatology on hydroxyzine use in patients with pruritus.

Key words: Anti-histamines, Dermatology, First generation, Hydroxyzine, Pruritus, Quality of life

INTRODUCTION

Itching, also known as pruritus, is an unpleasant sensation that causes a desire to scratch, which has an adverse effect on both psychological and physical aspects of a patient's life. It is the most common symptom of skin diseases, sometimes trifling or light and sometimes intolerable. In addition, it is one of the most common causes for patients to visit a dermatologist.^[1,2] It can occur either continuously or intermittently. The site may be local or generalized. The free teloneuron, which is distributed in the outermost layers of the epidermis, is principally responsible for itch.

The most common skin conditions that cause itching include eczema, urticaria, neurodermatitis, prurigo, and cutaneous pruritus.^[1] In addition, systemic diseases such as cancer, inflammatory diseases, metabolic diseases, infections, neurologic disorders, endocrine disorders, and diseases of the nervous and endocrine systems can cause pruritus.^[1]

The origin of itching is generally complex, and both internal and external causes can contribute to itching. The intrinsic factors that contribute to itch development are chronic infection, block of blood circulation, change of endocrine and metabolism, hereditary tendency to allergies, and so on, while extrinsic factors include inhaled substances, chemical materials, animal hair and fur skin, and so on.^[1]

The current review discusses the concept of pruritus and the use of hydroxyzine in the treatment and management as per the expert opinions of 20 physicians.

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Corresponding Author: Dr. Abha Diwan, MBBS, DVD, Jabalpur, Madhya Pradesh, India.

CLASSIFICATION OF PRURITUS

Pruritus is classified into five types: ^[1]

- Skin-derived pruritus
- Neuropathic pruritus
- Neurogenic pruritus
- Psychogenic pruritus
- Mixed pruritus

SKIN-DERIVED PRURITUS

This originates from the skin and results in irritation, dryness, or skin damage.

NEUROPATHIC PRURITUS

This is associated with the pathological alterations in the afferent pathway of sensory nerve fibers.

NEUROGENIC PRURITUS

The central nervous system is the source of neurogenic pruritus, in which itch is caused by the induction and transmission of mediators and receptors without causing nerve injury.

PSYCHOGENIC PRURITUS

It is a functional itch disorder caused by psychologic factors (some irritating factors, skin dryness, etc.) and psychiatric abnormalities.

MIXED PRURITUS

It is caused by multiple factors and is mediated by two or more mechanisms.

HYDROXYZINE

This is a first-generation anti-histamine that is used in treatment of pruritus. Sedative, anxiolytic, and antiemetic effects are all characteristic of this drug.^[3] According to the Indian Consensus 2021, hydroxyzine is generally the first line of treatment for generalized pruritus.^[4] The European guidelines on chronic pruritus recommends use of hydroxyzine as a first choice in treatment of pruritus due to its antipruritic, anxiolytic, and sedative properties.^[4]

MECHANISM OF ACTION

Hypersensitivity and allergic responses are initiated by H1 histamine receptors. Antigen exposure causes basophils and

mast cells to degranulate and produce histamine whenever a person is exposed to it. Histamine binds to H1 receptors and causes the release of proinflammatory mediators including interleukins, which aggravates the inflammatory response.^[3]

- Hydroxyzine is a potent inverse agonist of H1 receptors.
- It reduces the production of the chemical mediator histamine from mast cells, which is involved in pruritus, by blocking the H1 receptors, reducing receptor activity, and blocking receptor function.
- Due to its off-target behavior, this medication can be used as a sedative and anxiolytic.
- It has a fast onset of action that occurs within 15 and 60 min and duration of action is 4–6 h.^[3]

THERAPEUTIC EFFICACY OF HYDROXYZINE

Thomas *et al.*^[5] evaluated the effectiveness of hydroxyzine in Indian patients ($N = 400$) with chronic pruritus. This was a prospective, observational, and patient-reported outcome (PRO) study that considered dermatology quality of life index (DLQI) as primary end point and secondary endpoint was improvement in 5-D itch scores.

The DLQI score significantly increased from the baseline by 2.70 (95% CI: 2.39–3.01) at 2 weeks and 10.86 (95% CI: 9.95–11.78) at 12 weeks [Table 1].

Over the course of the 12-week period, a significant ($P < 0.0001$) decrease in the mean 5-D itch score was noted.

In comparison to the baseline, the 5-D score significantly increased by 2.76 (95% CI: 2.48–3.05) at 2 weeks and 7.35 (95% CI: 6.88–7.83) at 12 weeks [Table 2].

Symptom Elimination

At some point during the study, 189 of 391 individuals had no symptoms with hydroxyzine overall. At 2, 4, and 8 weeks, the cumulative symptom elimination rates were 3.58% ($n = 14$), 46.04% ($n = 180$), and 48.34% ($n = 189$). No serious adverse events were reported in the study participants.

Table 1: Effect of treatment on DLQI scores over treatment period (Adapted from Thomas *et al.*)

Time point	N	DLQI score Mean±SD	P value (vs. baseline)
Baseline	391	11.78±5.45	
2 weeks	391	9.08±5.47	<0.0001
4 weeks	366	5.85±4.62	<0.0001
8 weeks	190	5.99±2.65	<0.0001
12 weeks	176	3.35±2.33	<0.0001

DLQI: Dermatology quality of life index

Table 2: Effect of treatment on 5-D itch scores over the treatment period (Adapted from Thomas et al.)

Time point	n	5-D score Mean±SD	P value (vs. baseline)
Baseline	391	15.44±2.94	
2 weeks	391	12.72±3.32	<0.0001
4 weeks	366	10.58±3.26	<0.0001
8 weeks	190	10.01±2.38	<0.0001
12 weeks	176	8.05±1.94	<0.0001

SD: Standard deviation

Table 3: Before and after treatment: Pruritic score in three groups

Drugs	Before	After	Difference
Cetirizine	38.2±4.8	24.8±3.1	-13.8±4.5
Doxepine	37.2±4.9	17.8±2.5	-17.8±4.0
Hydroxyzine	37.3±5.1	16.7±2.3	-20.6±2.6
P-value	0.854	0.057	0.061

Data was showed as mean±standard deviation (Adapted from Shohrati et al.)

This study concluded that hydroxyzine hydrochloride significantly improved pruritus ($P < 0.0001$) and quality of life in patients ($P < 0.0001$) and was well tolerated in patients with chronic pruritus at the end of 12 weeks treatment.

The effectiveness and safety of cetirizine, doxepin, and hydroxyzine in the treatment of chronic pruritus caused by Sulfur Mustard were compared by Shohrati et al.^[6] This was a 4-week randomized double-blind study ($N = 75$).

For 4 weeks, patients received either cetirizine 10 mg, doxepin 10 mg, or hydroxyzine 25 mg/day.

The mean pre-treatment pruritic scores for the cetirizine, doxepine, and hydroxyzine groups were 38.2 ± 4.8 , 37.2 ± 4.9 , and 37.3 ± 5.1 , respectively. Following therapy, the mean pruritic scores in the cetirizine, doxepine, and hydroxyzine groups were 24.8 ± 3.1 , 17.8 ± 2.5 , and 16.7 ± 2.3 , respectively [Table 3]. Sedation was reported in all the treatment groups.

This study concluded that in treating the symptoms of patients with chronic pruritus, hydroxyzine 25 mg/day is as effective as doxepine 10 mg once daily, but more effective than cetirizine 10 mg once day.

CONCLUSIONS

- Hydroxyzine improves patients' quality of life, itch scores, and keeps pruritus under control.
- Improvement in symptoms can be observed in patients within a few days after the initiation of hydroxyzine therapy.

- Therefore, hydroxyzine should be considered as first-line treatment option in patients with pruritus.

EXPERT OPINION

Dr. Abha Diwan

In my routine clinical practice, I have seen that tinea, scabies, and urticaria are most common dermatological reasons for pruritus. Systemic diseases such as hepatitis, nephritis, and renal insufficiency are also associated with pruritus. I personally prefer hydroxyzine as a first-line therapy in pruritus management in such patients. One week after starting hydroxyzine therapy, it is possible to observe the improvement of pruritus symptoms. Improvement in 5D itch scores and DLQI scores (11–20 very large effect) is reported in these patients. Due to its antipruritic, anxiolytic, and sedative properties, it can be used as the first-line therapy in pruritus management.

Dr. Ankur Chauhan

Pruritus is commonly reported in 60% of dermatological outpatients. Dermatological causes such as eczema and scabies and non-dermatological causes such as renal causes, hepatic disorders, and hyperthyroidism are also associated with pruritus. It is also associated with complications such as sleep disturbances and stress. I personally prescribe Hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. It is possible to see an improvement in pruritus symptoms 1 week after starting hydroxyzine medication. 5D itch scores and DLQI scores are used to measure itch scores and quality of life in these patients.

Dr. Mahendra Nagargoje

Usually, urticaria, scabies, and atopic dermatitis are most common dermatological reasons for pruritus. Furthermore, systemic diseases such as renal failure and hepatic encephalopathy are also associated with pruritus. I personally prescribe hydroxyzine as a first-line therapy in pruritus management. One week after beginning hydroxyzine therapy, improvement of pruritus symptoms is noted. Improvement in 5D itch scores and DLQI scores (11–20 very large effect) is observed in these patients. Hydroxyzine can be prescribed as first-line medication for managing pruritus due to its antipruritic, anxiolytic, and sedative effects.

Dr. Narendra Kumar Trivedi

Eczema and tinea are the most common dermatological causes of pruritus, as per what I see in my routine clinical practice. Systemic diseases such as fever and hepatitis are also associated with pruritus. I personally prescribe

hydroxyzine as a first-line therapy in pruritus management, and symptoms become better in approximately >10 days) after starting hydroxyzine. Improvement in itch scores (Visual analog scale-VAS) and DLQI scores (6–10 moderate effect) is reported in these patients. Due to its antipruritic, anxiolytic, and sedative actions, it is considered a first-line therapy for treating pruritus.

Dr. Senthil G

I observed that urticaria, eczema, and lichenification are most common dermatological reasons for pruritus. Systemic disease such as jaundice and renal failure is also associated with pruritus. I personally choose hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. It is possible to see symptoms of pruritus improving within a week after starting hydroxyzine. Improvement in itch scores (5D) and DLQI scores (6–10 moderate effect) is observed in these patients.

Dr. Praveen Kumar Rathore

Scabies, tinea, and urticaria are the most common dermatological causes of pruritus, according to my usual clinical practice. Systemic diseases such as liver and kidney disorders are also associated with pruritus. I prescribe hydroxyzine as a first-line therapy in pruritus management. It is possible to see symptoms improvement (>10 days) after starting hydroxyzine medication. Improvement in itch scores (VAS) and DLQI scores (11–20 moderate effect) is observed in these patients. It is a first-line treatment for pruritus due to its antipruritic, anxiolytic, and sedative effects.

Dr. Dharani Durai

Usually scabies, eczema, and tinea corporis are the common causes for pruritus, in my clinical experience. Other systemic conditions such as thyroid, diabetes mellitus, and chronic renal failure are also linked with pruritus. I prescribe hydroxyzine as a first-line treatment option in my patients due to its antipruritic and sedative properties. Symptom improvement is observed in patients within 3–7 days after starting hydroxyzine. Improvement in itch scores (VAS) and DLQI scores (6–10 moderate effect) is also observed after hydroxyzine use.

Dr. Piyush Gupta

Urticaria, scabies, tinea, eczema, and xerosis are the most common dermatological causes of pruritus, as per my clinical expertise. Systemic condition like jaundice is associated with pruritus. I personally prescribe hydroxyzine as a first-line therapy for treatment in pruritus due to its antipruritic and anxiolytic properties. Symptom improvement is evident within a few days after starting hydroxyzine medication. Improvement in itch scores (5D) and patients' quality of life DLQI scores (11–20 very large effect) is evident in patients.

Dr. Pradeep Kumar

I observed that eczema and lichenification are frequent dermatological conditions for pruritus. Other systemic conditions like jaundice are associated with pruritus. Hydroxyzine is prescribed as a first-line therapy due to its antipruritic and sedative properties. It is possible to see symptoms of pruritus becoming better within a week after starting hydroxyzine medication. Reduction in itch scores (5D) and improvement in DLQI scores (6–10 moderate effect) is noticed.

Dr. Nilendu Sarma

Urticaria, eczema, and xerosis are the most common dermatological causes of pruritus, according to my clinical expertise. Systemic disease such as hepatic and kidney disorders is connected with pruritus. I personally choose hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and anxiolytic properties. Symptom improvement is noticed within a few days after starting hydroxyzine medication. Itch scores (5D) minimization and DLQI scores improvement (11–20 very large effect) are evident in patients.

Dr. Punam Caplash

Urticaria, scabies, and tinea are the most common dermatological causes of pruritus. Non-dermatological conditions such as chronic kidney disease and jaundice are also associated with pruritus. I personally prescribe hydroxyzine as a first-line therapy in pruritus management due to its antipruritic and sedative properties. After taking hydroxyzine within a few days, it is possible to observe the improvement of pruritus symptoms. Improvement in itch scores (5D) and increased quality of life DLQI scores (6–10 moderate effect) is noticed in patients.

Dr. Ravi Shankar Dwivedi

In my routine clinical practice, atopic dermatitis, senile pruritus, and scabies are most common dermatological reasons for pruritus. Pruritus is also linked to systemic conditions such as chronic kidney disease and hepatitis C. Hydroxyzine is preferred drug for treatment due to its antipruritic, anxiolytic, and sedative properties. After taking hydroxyzine within a week, it is possible to observe the improvement of pruritus symptoms. Improvement in itch scores (VAS) and DLQI scores (6–10 moderate effect) is evident in patients after hydroxyzine use.

Dr. Swami Dass Mehta

Urticaria is the most common dermatological causes of pruritus, according to my clinical expertise. Pruritus is also linked to systemic conditions such as renal disease. I personally prescribe hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. After taking hydroxyzine within a

day, symptomatic improvement is noticed. Improvement in itch scores (VAS) and DLQI scores (11–20 very large effect) is observed after hydroxyzine use.

Dr. Umesh Bhoi

I noticed that taenia, scabies, psoriasis, and eczema are common dermatological reasons for pruritus. Systemic disease such as diabetes mellitus, chronic renal failure, and hepatitis is also associated with pruritus. Hydroxyzine is commonly prescribed to treat pruritus due to its antipruritic, anxiolytic, and sedative effects. Symptom elimination and improvement were observed within 1–2 weeks, after starting hydroxyzine therapy. Improvement in itch scores (VAS) and DLQI scores (6–10 moderate effect) is noticed in patients after hydroxyzine use.

Dr. Sanjeev Aurangabadkar

Urticaria and eczema are the most common dermatological causes of pruritus. It is also linked to systemic conditions such as renal disease. I personally prescribe hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. After taking hydroxyzine within a day, it is possible to observe the improvement of pruritus symptoms with a week. Improvement in itch scores (VAS) and patients' quality of life DLQI scores (11–20 very large effect) is noticed after hydroxyzine use.

Dr. Tapesh Sharma

Pruritus is commonly observed in dermatological outpatients. Dermatological causes such as anemia, hypothyroidism, and cholestasis and non-dermatological causes such as jaundice, anemia, and hypothyroidism are also associated with pruritus. I prescribe hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. It is possible to see an improvement in pruritus symptoms within a week after starting hydroxyzine medication. 5D itch scores and DLQI scores (6–10 moderate effect) are improved in patients after hydroxyzine use.

Dr. Gautam Datta Gupta

Pruritus is a common dermatological complaint that affects about half of all patients who visit clinics. Dermatological causes such as eczema, scabies, and lichen planus and non-dermatological conditions such as hepatic and renal conditions are associated with pruritus. I personally treat patients with hydroxyzine for pruritus management due to its antipruritic and sedative properties. Symptom elimination is observed in patients within a week after treatment with hydroxyzine. After using hydroxyzine, an improvement in VAS scores and DLQI scores (11–20 very large effect) is noticed in patients.

Dr. Ganesh Sonawane

According to my clinical experience, urticaria is the most common dermatological reason for pruritus. Systemic disease such as chronic renal failure and hypothyroidism is also associated with pruritus. I prescribe hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. After taking hydroxyzine within a week, symptom improvement is evident in patients. Improvement in itch scores (Eppendorf itch questionnaire – EIQ) and DLQI scores (11–20 very large effect) is observed after hydroxyzine use.

Dr. Rajashekar ML

Atopic dermatitis is the most common dermatological causes of pruritus, according to my clinical expertise. Pruritus is also linked to systemic conditions such as liver and kidney diseases. Hydroxyzine is considered as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. After taking hydroxyzine within a week, an improvement in pruritus symptoms is noticed. Improvement in itch scores (VAS) and DLQI scores (6–10 moderate effect) is observed in patients after hydroxyzine use.

Dr. Bhumes Kumar

Pruritus is commonly observed in dermatological outpatients. Dermatological causes such as atopic dermatitis, tinea, and xerosis and non-dermatological causes such as renal causes, hepatic disorders, and hyperthyroidism are also associated with pruritus. It is also associated with complications such as sleep disturbances and stress. I prescribe hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. It is possible to see an improvement in pruritus symptoms 1 week after starting hydroxyzine medication. Improvement in 5D itch scores and DLQI scores is noticed in patients after hydroxyzine use.

Dr. Manjoor Ahmed Seikh

Pruritus is a common complaint among dermatological patients. Dermatological causes such as atopic dermatitis and taenia infections are associated with pruritus. I prescribe hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. It is considered to be very safe, and improvement in symptoms is observed within 2 weeks after starting hydroxyzine therapy. Improvement in symptom elimination (5-D itch scores) and improvement in quality-of-life scores (DLQI) is noticed in patients after hydroxyzine use.

Dr. Tamal Chakroborty

Pruritus is commonly observed in dermatological outpatients. Dermatological causes such as atopic

dermatitis and xerosis and systemic conditions such as renal causes and hepatic disorders are also associated with pruritus. I choose to prescribe hydroxyzine as a first-line therapy in pruritus management due to its antipruritic, anxiolytic, and sedative properties. Symptom improvement is evident within a week after starting hydroxyzine medication. 5D itch scores and DLQI scores are improved in patients after hydroxyzine use.

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