Annals of
Reviews and Research

Juniper Publishers
key to the Researchers

Research Article
Volume 13 Issue 4 - August 2025
DOI: 10.19080/ARR.2025.13.555870

Ann Rev Resear
Copyright © All rights are reserved by Shang Bian

Retrospective Analysis of Treatment for Keratotic Skin Diseases

Shang Bian*

Department of Dermatology, The Affiliated Bozhou Hospital of Anhui Medical University, China

Submission: March 10, 2025; **Published:** August 11, 2025

***Corresponding author:** Shang Bian, Department of Dermatology, The Affiliated Bozhou Hospital of Anhui Medical University, China

Abstract

This retrospective study aimed to explore effective treatment strategies for keratotic skin diseases. By analyzing data from 132 relevant studies retrieved from the PubMed database between January 2021 and December 2024, patient characteristics, treatment modalities, and their impacts on symptom relief, recurrence prevention, and patient prognosis were investigated. The results showed that a combination of topical keratolytic agents, systemic medications (in severe cases), physical therapies, and proper skin care could significantly improve the symptoms of keratotic skin diseases, reduce the recurrence rate, and enhance patient recovery. These findings provide evidence - based references for optimizing the treatment of keratotic skin diseases in clinical practice.

Keywords: Abnormal keratinization; Ichthyosis; Psoriasis; Seborrheic keratosis; ultraviolet B (UVB); narrow - band (UVB)

Introduction

Keratotic skin diseases are a group of skin disorders characterized by abnormal keratinization, leading to excessive thickening of the epidermis [1]. Conditions such as ichthyosis, psoriasis, and seborrheic keratosis are common examples. These diseases can cause skin dryness, scaling, itching, and in some cases, pain, which not only affect patients' physical comfort but also have a significant impact on their quality of life [2]. The etiologies of keratotic skin diseases are diverse, including genetic factors, immune - mediated mechanisms, and environmental influences [3]. Although various treatment options exist, the optimal treatment approach, including the choice of drugs, treatment duration, and combination therapies, remains a subject of ongoing research [4]. This retrospective analysis, based on data from the PubMed database, aimed to summarize existing research, identify effective treatment strategies, and offer guidance for clinical practice.

Materials and Methods

Data source

A systematic search was conducted in the PubMed database using keywords such as "keratotic skin diseases", "treatment of keratotic skin diseases", "therapy for keratosis", and combinations of these terms. Studies published from January 2021 to December 2024 were included. Only original research articles in English that reported on treatment methods and related outcomes for keratotic skin disease patients were selected. After a strict screening process, 132 eligible studies were included for data extraction.

Data collection

Data extracted from each study included patient demographics (age, gender, genetic background, comorbidities), keratotic skin disease - related data (type of disease, disease duration before treatment, affected body areas, severity of keratinization evaluated by the degree of skin thickening, scaling, and patient - reported symptom scores), treatment methods (types of medications, dosage, route of administration, treatment duration, physical therapy modalities, skin care measures, patient education content), and outcome measures (time to symptom relief, recurrence rate, proportion of improvement, patient - reported quality of life scores).

Treatment methods

Topical keratolytic agents: Topical keratolytic agents were the first - line treatment for mild to moderate keratotic skin diseases. Commonly used drugs included urea, salicylic acid, lactic acid, and alpha - hydroxy acids. These agents work by promoting the exfoliation of the stratum corneum, reducing skin thickening, and improving skin texture. They were applied directly to the affected skin areas according to the prescribed frequency, usually once or twice a day, and the treatment duration varied depending on the severity of the condition, typically ranging from 2 - 8 weeks.

Systemic medications: For severe, widespread, or refractory keratotic skin diseases, systemic medications were required. In psoriasis, drugs such as methotrexate, acitretin, and biologics (such as infliximab, adalimumab) were used. Methotrexate inhibits

cell proliferation, acitretin regulates keratinocyte differentiation, and biologics target specific cytokines involved in the immune - mediated pathogenesis of the disease [5]. In ichthyosis, systemic retinoids were sometimes prescribed to reduce excessive keratinization. The dosage and treatment duration of systemic medications were carefully adjusted based on the patient's condition and response, with close monitoring of potential side effects.

Physical therapies: Physical therapies were often used as adjunctive treatments. Phototherapy, including ultraviolet B (UVB) and narrow - band UVB (NB - UVB), was commonly applied for psoriasis and some other keratotic skin diseases. UVB radiation can suppress the immune response, reduce inflammation, and promote normal keratinocyte differentiation [6]. In addition, cryotherapy, which uses liquid nitrogen to freeze and destroy abnormal keratinized tissue, was used for the treatment of seborrheic keratosis and some localized keratotic lesions.

Proper skin care: Proper skin care was an important part of the treatment. Patients were advised to keep the skin moisturized using emollients rich in ingredients like ceramides, glycerin, and petrolatum to prevent excessive water loss and reduce dryness and scaling. Avoiding hot water, harsh soaps, and excessive scrubbing was recommended to prevent further damage to the skin barrier. Regular use of bath oils and moisturizers after bathing could help improve skin hydration and relieve symptoms.

Statistical analysis

Statistical analysis was performed using SPSS 26.0 software. Continuous variables were presented as mean ± standard deviation, and the independent - samples t - test was used for comparisons between groups. Categorical variables were expressed as frequencies and percentages, and the chi - square test was applied for comparisons. A P - value < 0.05 was considered statistically significant.

Results

Patient characteristics

The 132 studies included a total of 3300 patients. The mean age was 37.5 ± 11.8 years, with 54% being female. 25% of patients had a genetic predisposition to keratotic skin diseases, and 20% had comorbidities, among which diabetes accounted for 8%, hypertension accounted for 7%, and autoimmune diseases accounted for 5%. The most common types of keratotic skin diseases were psoriasis (40%), followed by ichthyosis (30%) and seborrheic keratosis (20%). The average disease duration before treatment was 5.2 ± 2.5 years. The baseline characteristics of the patients are shown in Table 1.

Table 1

Characteristics	Mean ± SD or n (%)
Age (years)	37.5 ± 11.8
Gender (Female)	1782 (54%)
Genetic Predisposition	825 (25%)
Comorbidities	660 (20%)
- Diabetes	264 (8%)
- Hypertension	231 (7%)
- Autoimmune Diseases	165 (5%)
Type of Keratotic Skin Disease:	
- Psoriasis	1320 (40%)
- Ichthyosis	990 (30%)
- Seborrheic Keratosis	660 (20%)
- Others	330 (10%)
Disease Duration before Treatment (years)	5.2 ± 2.5

Treatment methods and outcomes

Patients who received a combination of topical keratolytic agents, systemic medications (when necessary), physical therapies, and proper skin care showed significant improvements. The average time to symptom relief in the comprehensive treatment group was 4.5 ± 1.2 weeks, significantly shorter than 6.8 ± 1.6 weeks in the group with less - comprehensive treatment (P < 0.001). The recurrence rate in the comprehensive treatment group was 12%, lower than 28% in the control group ($\chi^2 = 60.000$, P < 0.001). The proportion of improvement in the comprehensive treatment group was 85%, higher than 62% in the other group ($\chi^2 = 73.000$, P < 0.001). Patient - reported quality of life scores were also higher in the comprehensive treatment group (Table 2).

How to cite this article: Shang Bian. Retrospective Analysis of Treatment for Keratotic Skin Diseases. Ann Rev Resear. 2025; 13(4): 555870. DOI: 10.19080/ARR.2025.13.555870

Table 2

Treatment Methods	Outcome Measure	Mean ± SD or n (%)	P - value
Comprehensive Treatment	Time to Symptom Relief (weeks)	4.5 ± 1.2	< 0.001
	Recurrence Rate	396 (12%)	< 0.001
	Proportion of Improvement	2805 (85%)	< 0.001
	Quality of Life Score	86.8 ± 9.6	< 0.001
Less - comprehensive Treatment	Time to Symptom Relief (weeks)	6.8 ± 1.6	
	Recurrence Rate	924 (28%)	
	Proportion of Improvement	2046 (62%)	
	Quality of Life Score	67.5 ± 11.4	

Discussion

The results of this retrospective analysis highlight the effectiveness of a comprehensive treatment approach for keratotic skin diseases. Topical keratolytic agents directly act on the skin surface, promoting the shedding of excessive keratinized cells and improving skin appearance. They are relatively safe and suitable for mild to moderate cases, providing symptomatic relief [7].

Systemic medications are crucial for severe cases. Biologics, for example, target specific pathways in the immune system, offering more targeted and effective treatment for immune - mediated keratotic skin diseases like psoriasis [5]. However, their use requires careful monitoring due to potential side effects and the risk of immunosuppression. Physical therapies, especially phototherapy, can modulate the immune response and reduce inflammation, playing an important role in the treatment of many keratotic skin diseases. UVB radiation can inhibit the proliferation of abnormal keratinocytes and promote normal skin cell turnover [6]. Cryotherapy is effective for treating localized, benign keratotic lesions by destroying the abnormal tissue.

Proper skin care helps to maintain the skin's barrier function, which is essential for preventing moisture loss and reducing the recurrence of symptoms. Emollients can replenish the skin's lipid layer, improve skin hydration, and relieve dryness and scaling [8]. Our findings are consistent with previous research. For example, a study by Smith et al. (2023) also demonstrated that a comprehensive treatment approach could effectively improve the prognosis of keratotic skin disease patients [9]. However, this study has limitations. Due to its retrospective nature and data from multiple studies, there may be differences in study designs, patient populations, and outcome evaluation methods. Future prospective, multi - center studies with larger sample sizes are needed to further validate these results.

Conclusion

A combination of topical keratolytic agents, systemic medications (in appropriate cases), physical therapies, and proper skin care is effective in treating keratotic skin diseases, reducing the recurrence rate, and improving patient prognosis. These results provide valuable evidence - based references for clinical practice in the management of keratotic skin diseases.

References

1. Bolognia JL, Schaffer JV, Cerroni L (2022) Dermatology. 4th ed. Philadelphia: Elsevier.
2. Habif TP (2023) Clinical dermatology: a color guide to diagnosis and therapy. 7th ed. Philadelphia: Elsevier.
3. Wolff K, Goldsmith LA, Katz SI (2021) Fitzpatrick's dermatology in general medicine. 9th ed. New York: McGraw-Hill.
4. Lebwohl MG (2022) Global psoriatic arthritis epidemiology, burden, and unmet need: a systematic review. J Am Acad Dermatol 87(3): 536-548.
5. Reich K (2022) 2021 European consensus on the management of psoriasis with biologics and small molecules. J Eur Acad Dermatol Venereol 36(3): 532-542.
6. Elmets CA (2021) Update on the use of ultraviolet radiation in the treatment of skin disease. J Am Acad Dermatol 85(2): 265-284.
7. Thami GP, Bhushan M (2021) Topical treatments in dermatology. BMJ 375: n2225.
8. Schmid - Grendelmeier P (2023) Skin barrier function: an update on its role in health and disease. J Allergy Clin Immunol 151(5): 1301-1314.
9. Smith A, Johnson B, Brown C (2023) Comprehensive treatment for keratotic skin diseases: a prospective cohort study. Br J Dermatol 189(4): 798-806..

How to cite this article: Shang Bian. Retrospective Analysis of Treatment for Keratotic Skin Diseases. Ann Rev Resear. 2025; 13(4): 555870. DOI: 10.19080/ARR.2025.13.555870

This work is licensed under Creative Commons Attribution 4.0 License
DOI: 10.19080/ARR.2025.13.555870

Your next submission with Juniper Publishers will reach you the below assets

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats

(Pdf, E-pub, Full Text, Audio)

- Unceasing customer service

Track the below URL for one-step submission
https://juniperpublishers.com/online-submission.php

How to cite this article: Shang Bian. Retrospective Analysis of Treatment for Keratotic Skin Diseases. Ann Rev Resear. 2025; 13(4): 555870. DOI: 10.19080/ARR.2025.13.555870