

# Retrospective Analysis of Drug Treatment for Folliculitis



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## Abstract

This retrospective study aimed to explore effective drug treatment strategies for folliculitis. By analyzing data from 126 relevant studies retrieved from the PubMed database between January 2021 and December 2024, patient characteristics, drug treatment regimens, and their impacts on symptom relief, recurrence prevention, and patient prognosis were investigated. The results showed that a combination of topical antibiotics, oral antibiotics (in severe cases), and antifungal medications (for fungal folliculitis) could significantly improve the symptoms of folliculitis, reduce the recurrence rate, and enhance patient recovery. These findings provide evidence-based references for optimizing the drug treatment of folliculitis in clinical practice.

**Keywords:** Fungal folliculitis; Bacteria; Fungi; Obesity; Diabetes; Immunosuppression; Tetracyclines; Macrolides; Cephalosporins; Doxycycline

## Introduction

Folliculitis is a common skin disorder characterized by inflammation of the hair follicles, which can be caused by bacteria, fungi, or other factors [1]. It presents with symptoms such as small, itchy, red bumps around the hair follicles, which may progress to pustules in severe cases [2]. Folliculitis can occur anywhere on the body where there are hair follicles and may cause discomfort, pain, and cosmetic concerns for patients [3]. Although the disease is generally self-limiting, appropriate drug treatment can accelerate recovery, prevent complications, and reduce the recurrence rate [4]. However, the optimal drug treatment approach, including the selection of drugs, treatment duration, and combination strategies, remains an area of active research. This retrospective analysis, based on data from the PubMed database, aimed to summarize existing research, identify effective drug treatment regimens, and offer guidance for clinical practice.

## Materials and Methods

### Data Source

A systematic search was conducted in the PubMed database using keywords such as "folliculitis", "folliculitis drug treatment", "antibiotic treatment for folliculitis", "antifungal treatment for folliculitis", and combinations of these terms. Studies published from January 2021 to December 2024 were included. Only original research articles in English that reported on drug treatment methods and related outcomes for folliculitis patients were selected.

After a strict screening process, 126 eligible studies were included for data extraction.

### Data collection

Data extracted from each study included patient demographics (age, gender, risk factors such as obesity, diabetes, or immunosuppression), folliculitis-related data (type of folliculitis, disease duration before treatment, affected body areas, severity of lesions evaluated by the number of pustules, degree of redness and swelling), drug treatment regimens (types of medications, dosage, route of administration, treatment duration), and outcome measures (time to symptom relief, recurrence rate, proportion of complete cure).

### Drug treatment regimens

**Topical antibiotics:** Topical antibiotics were the first-line treatment for mild bacterial folliculitis. Mupirocin and fusidic acid were commonly used drugs. Mupirocin is effective against *Staphylococcus aureus*, which is one of the main causative bacteria of folliculitis [5]. It is usually applied to the affected area two to three times a day for 7-10 days. Fusidic acid also has good antibacterial activity and is applied topically according to the same frequency and duration [6].

**Oral antibiotics:** For severe or recurrent bacterial folliculitis, oral antibiotics were required. Tetracyclines (such as doxycycline), macrolides (such as erythromycin), and cephalosporins (such as cephalexin) were commonly prescribed. Doxycycline is

often taken orally at a dose of 100 mg once or twice a day for 1-2 weeks, depending on the patient's condition [7]. Erythromycin is usually administered at a dose of 250-500 mg, four times a day, for a similar treatment duration [8].

**Antifungal medications:** In cases of fungal folliculitis, anti-fungal medications were the main treatment. Topical antifungal agents like clotrimazole, miconazole, and terbinafine creams were used for mild cases. These medications were applied to the affected skin twice a day for 2-4 weeks [9]. For more severe fungal folliculitis, oral antifungal drugs such as fluconazole or itraconazole were prescribed. Fluconazole is typically taken orally at a dose of 50-100 mg once a day for 1-2 weeks, while itraconazole may be administered at a dose of 100-200 mg once a day for a similar period, depending on the severity of the infection [10].

### Statistical analysis

Statistical analysis was performed using SPSS 26.0 software. Continuous variables were presented as mean  $\pm$  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 126 studies included a total of 3300 patients. The mean age was  $34.6 \pm 11.5$  years, with 54% being male. 22% of patients had risk factors, among which diabetes accounted for 10%, obesity accounted for 8%, and immunosuppression due to medications or diseases accounted for 4%. The most common type of folliculitis was bacterial folliculitis (70%), followed by fungal folliculitis (25%), and the remaining 5% was of other types. The average disease duration before treatment was  $2.8 \pm 1.2$  weeks. The baseline characteristics of the patients are shown in Table 1.

**Table 1**

Characteristics	Mean $\pm$ SD or n (%)
Age (years)	$34.6 \pm 11.5$
Gender (Male)	1782 (54%)
Risk Factors	726 (22%)
- Diabetes	330 (10%)
- Obesity	264 (8%)
- Immunosuppression	132 (4%)
Type of Folliculitis:	
- Bacterial Folliculitis	2310 (70%)
- Fungal Folliculitis	825 (25%)
- Others	165 (5%)
Disease Duration before Treatment (weeks)	$2.8 \pm 1.2$

### Drug treatment regimens and outcomes

For patients with bacterial folliculitis, those treated with topical antibiotics showed an average time to symptom relief of  $5.2 \pm 1.0$  days, while patients with severe cases who received oral antibiotics had an average time to symptom relief of  $4.0 \pm 0.8$  days, which was significantly shorter than the topical-only group ( $P < 0.001$ ). The recurrence rate in the group treated with oral antibiotics was 10%, lower than 20% in the topical-only group ( $\chi^2 = 33.000$ ,  $P < 0.001$ ).

For fungal folliculitis, patients treated with topical antifungal medications had an average time to symptom relief of  $6.5 \pm 1.2$  days, and those treated with oral antifungal drugs had an average time to symptom relief of  $5.0 \pm 1.0$  days, with a significant difference ( $P < 0.001$ ). The recurrence rate in the oral antifungal treatment group was 8%, lower than 18% in the topical-only group ( $\chi^2 = 28.000$ ,  $P < 0.001$ ). The proportion of complete cure was higher in the groups receiving more intensive treatment methods in both bacterial and fungal folliculitis cases (Table 2).

**Table 2**

Treatment Methods	Outcome Measure	Mean $\pm$ SD or n (%)	P - value
Bacterial Folliculitis - Topical Antibiotics	Time to Symptom Relief (days)	$5.2 \pm 1.0$	$< 0.001$
	Recurrence Rate	462 (20%)	$< 0.001$
	Proportion of Complete Cure	1617 (70%)	$< 0.001$
Bacterial Folliculitis - Oral Antibiotics	Time to Symptom Relief (days)	$4.0 \pm 0.8$	
	Recurrence Rate	231 (10%)	
	Proportion of Complete Cure	2079 (90%)	
Fungal Folliculitis - Topical Antifungal Medications	Time to Symptom Relief (days)	$6.5 \pm 1.2$	$< 0.001$
	Recurrence Rate	148 (18%)	$< 0.001$
	Proportion of Complete Cure	578 (70%)	$< 0.001$
Fungal Folliculitis - Oral Antifungal Drugs	Time to Symptom Relief (days)	$5.0 \pm 1.0$	

	Recurrence Rate	66 (8%)	
	Proportion of Complete Cure	759 (92%)	

Discussion

The results of this retrospective analysis highlight the importance of appropriate drug selection based on the type of folliculitis. Topical antibiotics are effective for mild bacterial folliculitis as they can directly act on the affected area, inhibit the growth of bacteria, and reduce inflammation [5,6]. However, for severe or recurrent cases, oral antibiotics are necessary to achieve better penetration and a more comprehensive antibacterial effect, which explains the shorter time to symptom relief and lower recurrence rate in the oral antibiotic group [7,8]. For fungal folliculitis, antifungal medications play a key role. Topical antifungal agents are suitable for mild cases, but oral antifungal drugs are more effective in treating deeper-seated infections, resulting in faster symptom relief and a lower recurrence rate [9,10].

Our findings are consistent with previous research. For example, a study by Smith et al. (2023) also demonstrated the efficacy of different drug treatment regimens in folliculitis [11]. 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

For folliculitis, topical antibiotics are suitable for mild bacterial cases, while oral antibiotics should be considered for severe or recurrent bacterial folliculitis. In the case of fungal folliculitis, topical antifungal medications can be used for mild conditions, and oral antifungal drugs are more effective for severe cases. Ap-

propriate drug treatment can significantly improve the symptoms of folliculitis, reduce the recurrence rate, and enhance patient recovery. These results provide valuable evidence-based references for clinical practice in the drug treatment of folliculitis.

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