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Original Article

Efficacy of Combination Therapy of Clindamycin and Rifampicin in Recurrent Furunculosis

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Abstract

Objective To assess the efficacy of combination therapy of clindamycin and rifampicin in recurrent furunculosis.

Methods This study was conducted at the outpatient Department of Dermatology (Khalifa Gul Nawaz teaching hospital MTI, Bannu, Bannu Medical College) from December 2019 to December 2020. A total of 150 patients aged between 18 and 65 years of recurrent furunculosis were enrolled. Mupirocin 2 percent was applied on the lesions involving the nostrils, and anal region twice daily, and took oral 400mg tablet of metronidazole three times daily for 10 days. They were prescribed Clindamycin 300 mg twice daily and Rifampicin 600 mg OD for 10 days. The drug is considered efficacious if the patient had no episode of furuncles during a 2-3 month follow-up period.

Results There were 74 patients in Group A and 76 in Group B. Patients in Groups A and B had 30 (40.54%) and 46 (60.52%) male patients and 44 (59.45%) and 30 (39.47%) female patients, respectively. Patients had five major sites of disease recurrence; face 31 (20.6%), neck 30 (20%), axilla 32 (21.3%), buttock 36 (24%) and groin in 21 (14%) patients.

Conclusion It is concluded that combination therapy of clindamycin and Rifampicin in recurrent furunculosis is far better than a patient receiving no treatment for recurrent furunculosis. So, combination therapy of Clindamycin and Rifampicin should be considered a promising alternative for treating recurrent furunculosis.

Key words
Clindamycin, rifampicin, recurrent furunculosis.

Introduction

Recurrent episodes of furunculosis are defined as 3 or more episodes within one year.[1] Chronic or recurrent furunculosis is caused by the bacteria Staphylococcus aureus that colonizes in the nostrils, vulvovaginal and perirectal area, and on the buttocks.[2,3] Some species like Corynebacterium, Staphylococcus epidermidis, and Streptococcus pyogenes are reported in furunculosis. Immunodeficiency may be the least contributing factor.[4] Recurrent furunculosis patients have not been analyzed for their daily routine. However, Methicillin-resistant staphylococcus aureus patients and those suffering from hidradenitis suppurativa experience very poor quality of life.[5-8]

The treatment of recurrent furunculosis is lengthy and challenging, difficult for both the patient and the dermatologist.[9,10] Dermatologists follow a more aggressive approach like removing the lesion, exploring the rest of the draining sinuses, prescribing systemic antibiotics, and then covering the affected

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region. In our study, to prevent patients from recurrent furunculosis, we used 2% mupirocin on the lesion, in the nostrils and peri-anal region twice daily, metronidazole tablet 400 mg thrice daily, Clindamycin 300 mg twice daily, and Rifampicin 600 mg OD. Clindamycin and Rifampicin have proven effective against MRSA infections. In our study, we analyzed the impact of Clindamycin and Rifampicin in recurrent furunculosis patients.

Methods

This prospective study was conducted at the outpatient Department of Dermatology, Khalifa Gul Nawaz teaching hospital MTI, Bannu Medical College, from December 2019 to December 2020 in Bannu. Permission for institutional review was obtained before the start of the Research. The participants were assured privacy and confidentiality along with written informed consent. The patients with recurrent furunculosis were graded according to were enrolled using the non-probability sampling method. A total of 150 patients aged between 18 and 65 years with a history of two or more episodes of furunculosis in a year with clinical evidence of furunculosis were included. Inclusion criteria were patients having two to three episodes of furunculosis per year. The exclusion criteria included were diseases of chronic nature such as diabetes, chronic liver failure (CLD), chronic renal failure (CRF), and other connective tissue disorders. In this study, demographic features of the patients such as their age, size, gender, name, and address were collected through pre-designed forms.[11]

Two groups were made, Group A contained 74 and Group B contained 76 patients. Group A was given Linezolid and Group B used 2% mupirocin on the lesion, in the nostrils and peri-anal region twice daily, metronidazole tablet 400 mg thrice daily, Clindamycin 300 mg twice daily, and Rifampicin 600 mg OD for 10 days. The drug was supposed to be effective if no episodes of furuncles recurred during post-treatment follow-up for 2-3 months.[12] The results of the study were analyzed using Statistical software. (SPSS 20).

Results

A total of 150 patients (both male and female) were chosen for this research. There were 74 patients in Group A and 76 in Group B. Patients in Groups A and B had 30 (40.54%) and 46 (60.52%) male patients and 44 (59.45%) and 30 (39.47%) female patients, respectively **(Table 1)**. The majority of patients were between the ages of 31 and 40 years 62 (41.33%), and very few patients were between 51 and 60 years **(Table 2)**. Patients had five major sites of disease recurrence; face 31 (20.6%), neck 30 (20%), axilla 32 (21.3%), buttock 36 (24%) and groin in 21 (14%). The most common site which is involved was the buttocks **(Table 3)**. In our study, most patients with recurrent furunculosis in group A presented with a lesion in their 6th follow-up 21 (28.37 %).

Table 1 Gender wise distribution of patients.

Gender	*Group A* *Number (%)*	*Group B* *Number (%)*
Male	30 (40.54 %)	46 (60.52 %)
Female	44 (59.45 %)	30 (39.47 %)
Total	74	76

Table 2 Age-wise distribution of patients.

Age (Years)	*Number of patients with recurrent furunculosis (%)*
21-30	38 (25.33)
31-40	62 (41.33)
41-50	33 (22)
51-60	17 (11.33)
Total	150 (99.9%)

Table 3 Sites wise distribution of patients.

Face	31 (20.6%)
Neck	30 (20%)
Axilla	32 (21.3%)
Buttock	36 (24%)
Groin	21 (14%)
Total	150 (99.9%)

Table 4 Patients in Group A with recurrent furunculosis on follow up (n=74).

Group A	*No patients with active furunculosis on follow up*			*Total number of patients with recurrent furunculosis (%)*
	Total	*Male*	*Female*	
1st follow up	3	2	1	3 (4.05%)
2nd follow up	7	5	2	7 (9.45%)
3rd follow up	4	4	1	11 (14.86%)
4th follow up	7	1	6	14 (18.91%)
5th follow up	5	1	4	18 (24.32%)
6th follow up	6	3	3	21 (28.37%)
Total	32	15	17	74 (99.9%)

Table 5 Patients in Group B on Combination therapy of Clindamycin and Rifampicin with recurrent furunculosis on follow up (n=76).

Group B	*No patients with active furunculosis on follow up*			*Total number of patients with recurrent furunculosis*
	Total	*Male*	*Female*	
1st follow up	2	1	1	5 (6.57%)
2nd follow up	0	0	0	5 (6.57%)
3rd follow up	1	0	1	6 (7.89%)
4th follow up	3	1	2	8 (10.52%)
5th follow up	0	0	0	9 (11.84%)
6th follow up	2	1	1	11 (14.47%)
Total	8	3	5	42 (57.86%)

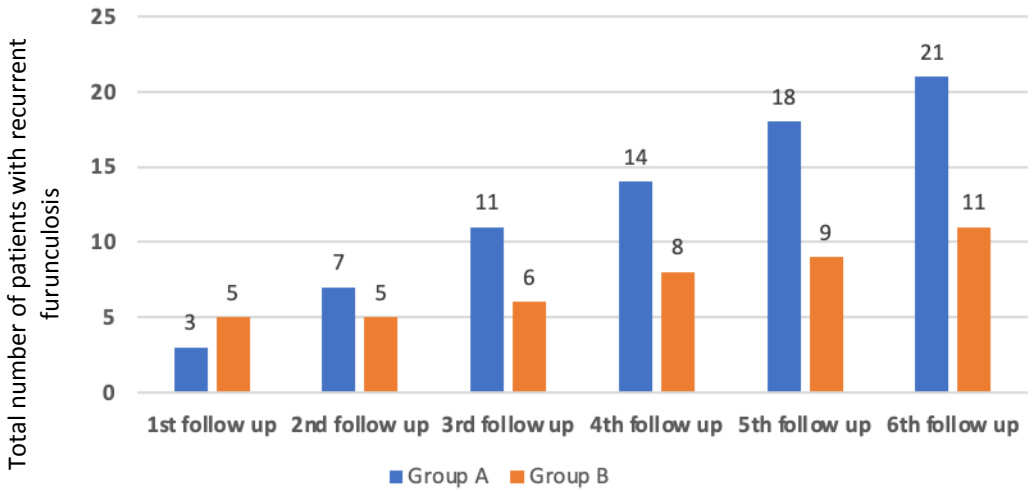

Figure 1 Number of patients receiving Linezolid therapy (group A) versus Clindamycin and Rifampicin therapy (group B) n=150

Very few in their 1st and 2nd follow up i.e., 3 (4.05 %) and 7 (9.45%) respectively **(Table 4)**, while patients in group B with recurrent furunculosis presented in their 6th follow up 11 (14.47%) and very few in their 1st and 2nd follow-up i.e., 5 (6.57%) and 5 (6.57%) **Table 5**.

Discussion

There is a notable incidence of furunculosis nowadays. Furunculosis is notorious for its recurrence. According to a study in 2019 by Shallcross *et al.*, up to ten percent of patients experience recurrence over one year. Staphylococcus aureus is the most critical bug for recurrent furunculosis which is resistant to anti-bacterial therapy.[12] This resistant S. aureus is an inhabitant of moist and warm skin places, and sometimes in the nasal cavity of those who suffer from recurrent furunculosis. A study done in 2010,

revealed that leukocytes of healthy individuals responded well to stimuli by raising nitric oxide and reactive oxygen species. However, in response to stimuli for patients with recurrent furunculosis, the leukocyte shows reduced nitric oxide and reactive oxygen production.[13] This indicates that adequate response by leukocytes plays a vital role in defense against recurrent furunculosis.

By definition, when a patient develops furuncles more than twice a year, it is termed recurrent furunculosis. For decades, skin infections have been treated with erythromycin, dicloxacillin, cloxacillin, and cefalexin. The antibiotics of choice for skin and soft tissue infections (SSTIs) are macrolides, cephalosporins, and quinolones.[14]

In our study, we enrolled 150 participants who were divided into group "A" and group "B". Group "A" patients were given linezolid whereas group "B" patients were given a combination therapy of clindamycin 300mg and rifampicin 600mg. In group "A" 21 patients (28.37%) reported back with recurrent furunculosis in contrast with only 11 patients (14.47%) in group "B" reported recurrent furunculosis.Statistically, the efficacy of combination therapy of clindamycin and rifampicin is far better than a patient receiving linezolid treatment for recurrent furunculosis.

Conclusion

It is concluded that combination therapy of clindamycin and rifampicin is far better than a patient receiving linezolid treatment for recurrent furunculosis. So, we should consider combination therapy of clindamycin and rifampicin as a promising alternative for treating recurrent furunculosis.

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