



A Study on the Management of Cellulitis Patients in Tertiary Care Teaching Hospital

¹ Dr. N. Junior Sundresh, ²Dr. C.K.Dhanapal, ³A.Sowmiya, ⁴R.Subhalakshmi.

1 Professor, Department of general surgery, Government Cuddalore Medical College and Hospital (GCMCH), Chidambaram, Tamilnadu, India.

2 Professor, Department of pharmacy, Annamalai University, Chidambaram, Tamilnadu, India.

3 Department of pharmacy, Annamalai University, Chidambaram, Tamilnadu, India.

4 Department of pharmacy, Annamalai University, Chidambaram, Tamilnadu, India.

Received: 2025-04-25

Revised: 2025-05-05

Accepted: 2025-05-10

ABSTRACT

Background: We aimed to study on the management of cellulitis patients in tertiary care teaching hospital. **Methods:** This was the prospective study of patients with cellulitis and management of the disease at the Government Cuddalore Medical College and Hospital (GCMCH). **Results:** Thirty patients were included in this study. Treatment of cellulitis includes use of antibiotics such as piperacillin, ciprofloxacin, gentamicin, cefotaxime, ceftriaxone, metronidazole. Surgical procedure includes conservative procedure, Incision and drainage. Other medications include paracetamol, ranitidine, supplements such as vitamin C, BCT., chymoral forte, and medications for some patients with co-morbidities. **Conclusion:** Patients undergone treatment on cellulitis with medications and surgical procedure have better quality of life, in comparison to before treatment. Untreated cellulitis causes bacteremia, endocarditis, toxic shock, sepsis. Patients saved from this complications by proper treatment.

Keywords: Cellulitis, management, antibiotics, surgical procedure.

1.INTRODUCTION

The definition of cellulitis is a diffuse, deep, acute inflammation of the skin including the dermis and subcutaneous tissue. It often follows an acute, or chronic trauma, and important cause of hospital admission. It is characterised by erythema, swelling, warmth and pain. It can affect any part but most commonly lower limb is involved. The identification of risk factors and timely intervention of cellulitis will reduce the morbidity and mortality. It mostly caused by Staphylococcus, streptococcus infection. The mechanism is uncertain but may represent a vigorous systemic immunologic and inflammatory reaction to materials elaborated by streptococci (such as hyaluronidase and streptokinase) that precede apparent inflammation at the skin site. These systemic findings include fever, chills, tachycardia, hypotension, and confusion, often accompanied by a considerable leukocytosis. Many patients, however, are afebrile. In several series, mostly of hospitalized patients, for example, the frequency of fever has been 22% to 71%, and may be lower among those treated as outpatients. Patients with cellulitis may present either at the Out Patient Department (OPD), general medicine, elderly care, dermatology, orthopaedic, vascular and general surgery departments.

2.MATERIALS AND METHODS:

This is a prospective study performed in the Department of Surgery, Government Cuddalore

Medical College and Hospital (GCMCH), Tamilnadu, India. This study was conducted after Institutional Review Board and Ethics Committee clearance. The duration of the study was from September 1, 2023, to February 29, 2024.

2.1 OBJECTIVE OF THE STUDY:

The primary objective of the study is to analyse the treatment procedure of cellulitis patients during the given time period.

2.2 CRITERIA:

The inclusion criteria are patient attending opd with c/o cellulitis on any parts of the body, irrespective of their age and gender.



The exclusion criteria are patient who are not willing to cooperate in this study.

2.3 METHODS:

MANAGEMENT OF CELLULITIS CONSERVATIVE METHOD:

The treatment involves use of medications such as antibiotics such as penicillin, ampicillin, azithromycin, etc as first line medications, and drugs such as ciprofloxacin as second line treatment, and prednisolone as adjuvant to antibiotics, hyperbaric oxygen, for prophylaxis intramuscular weakly penicillin were given.

OPERATIVE PROCEDURE:

INCISION AND DRAINAGE PROCEDURE:

Under SAP, under LA, parts painted and draped, incision of size needed made over affected area. Pus if present drained. Through betadine and peroxide wash given. Hemostasis achieved. Sterile compression dressing done.

DRAINAGE AND WOUND DEBRIDEMENT PROCEDURE are also done.

Table 1:

PATIENT CHARACTERISTICS:

AGE	No. of patients	Percentage%
31-40	4	13.34
41-50	4	13.34
51-60	13	43.34
61-70	7	23.34
71-80	2	6.67

TREATMENT CRITERIA:

ANTIBIOTIC THERAPY GIVEN TO CELLULITIS PATIENTS

ANTIBIOTICS	NO. OF PATIENTS	Percentage%
Ciprofloxacin	9	30
Gentamicin	8	26.67
Piperacillin	13	43.34
Ceftriaxone	2	6.67
Cefotaxime	10	33.34
Ampicillin	4	13.34
Azithromycin	1	3
Clindamycin	1	3
Metronidazole	6	20
Amikacin	3	10
Rifaximin	1	3

METHODS

METHODS	NO. OF PATIENTS	Percentage%
Conservative	11	36.67
Surgey procedure	19	63.34



CELLULITIS AND CO-MORBIDITIES

DISEASE CONDITION	NO. OF PATIENTS	Percentage%
Without co-morbidity	10	34
With co-morbidity	20	66.67

CO-MORBIDITY IN PATIENTS:

CO-MORBIDITIES	NO. OF PATIENTS	Percentage%
T2DM	18	60
SHTN	11	25
CKD	1	5
ANEMIA	2	10
ECZEMA	1	5
HYPOKALEMIA	1	5
COPD	1	

TREATMENT OF CELLULITIS:

First line management of cellulitis patients mostly of lower leg Left or Right foot cellulitis includes use of antibiotics such as penicillin, piperacillin, ampicillin. Second line drug include ciprofloxacin, clindamycin, cefotaxime, amikacin, ceftriaxone etc. Patients selected in the study have without co morbidity 34% and with co morbidity 66.67%. Treatment for co morbidity such as T2DM, SHTN, CKD, Anemia and drugs such as T.Amlong, T.Metformin, T.Vit C, Chymoral forte, Tramadol, T.Furosemide etc. are given.

MANAGEMENT:

Some patients respond to oral antibiotic therapy but most patients attending an emergency medical unit are treated with intravenous antibiotics. In typical lower leg cellulitis it is generally recommended that the antibiotic choice should cover streptococcal and staphylococcal disease. Penicillin is usually recommended for known streptococcal infection as it has a low minimum inhibitory concentration (MIC) for streptococci Cephalosporins (especially cefuroxime or ceftriaxone), macrolides, vancomycin, fluoroquinolones, teicoplanin and clindamycin may also be used. Erythromycin or azithromycin is suitable for patients who are allergic to penicillin.

LONG TERM MORBIDITY:

The significant long-term morbidity of lower leg cellulitis is due to one or more of the following: recurrent episodes, persistent oedema, ulceration.

These factors may often be interrelated. Ulceration provides a portal of entry for infection, leading to further episodes.

To prevent recurrences, it is imperative to consider and treat: tinea pedis, usually with intermittent topical imidazole or allylamine compounds ulceration, with compression bandaging oedema, with adequate long-term support stockings.

RESULTS:

From the above data, elderly patients of age group 50-70 years are mostly affected with cellulitis. Cellulitis caused due to some co morbidities (66.67%) such as T2DM, SHTN, Anemia, CKD, etc. Some patients (36.67%) can be cured by simple conservative methods by taking medications and following specific diet, lifestyle modification. But in some patients (60%) surgical procedure is the way to treat some cellulitis due to co morbidity and severity.

DISCUSSION:

Conservative methods and surgical procedure such as incision and drainage method used in patients have better clinical outcomes. Mild starting stages, conservative method is essential in treatment while in complicated cases with co morbidity surgical procedure required for the recovery. Antibiotics plays major role in the treatment and antibiotic selection is based on the type of organism



present by culture tests. Patients with co morbidity mostly affected with cellulitis than without comorbs. Age plays a major role in cellulitis as 50-70 years are prone to be affected. Comorbidity treated with consequent drugs as this may also severity of cellulitis.

In six months, study, 19 patients subjected to surgical procedure and 11 patients treated with conservative methods. 60% (18) patients have T2DM, and 11 (25%) patients have SHTN as most commonly occurring co morbidity. Based on the study Ciprofloxacin, piperacillin, gentamicin are mostly given antibiotics to patients.

CONCLUSION:

Antibiotic therapy and treatment with medications for co morbidity (conservative) and surgical methods in severe cases plays important role in management and treatment of cellulitis. Mostly patients are affected with lower limb cellulitis when compared to other types of cellulitis. Elderly patients have more chances of occurrence of cellulitis. Patients with Comorbidity such as T2DM, SHTN mostly have chances of occurrence of cellulitis.

Patients undergone treatment on cellulitis with medications and surgical procedure have better quality of life, in comparison to before treatment. Untreated cellulitis causes bacteremia, endocarditis, toxic shock, sepsis. Patients saved from this complications by proper treatment.

REFERENCES:

1. Neil H Cox, Management of lower leg cellulitis-Clin Med JRCPL 2002.
2. E.A Burian, T. Karlsmark, P.J. Franks, V. Keeley, I. Quere and C.J. Moffatt –CELLULITIS IN CHRONIC OEDEMA OF THE LOWER LEG: an international cross-sectional study.-2021.
3. Khalifa Mayouf Albuainain et al – Causes and Management of cellulitis-The Egyptian journal of Hospital Medicine January 2018 Vol 70.
4. E. Ortiz-Lazo, et al –An update on the treatment and management of cellulitis 2 Feb 2019.
5. Tadhg Sullivan and Eoghan de Barra-Diagnosis and management of cellulitis-Clinical medicine 2018 Vol 18.
6. Melaine Sutherland, Annmarie Parent-Cellulitis: Assessment, Diagnosis and management 2017.
7. G.R Balaji sharma, K. Sathik Mohammad Massodu, A. Collins, G. Parthiban-Clinical Study of risk factors, Clinical Presentation and Management of cellulitis Lower limb 2019.
8. J Van der Stricht, - Surgical management of cellulitis-1981.
9. Cox NH, Colver GB, Paterson WD. Management and morbidity of cellulitis of the leg. J R Soc Med 1998;91:634–7.
10. Tsao H, Johnson RA. Bacterial cellulitis. Curr Opin Dermatol 1997;4:33–41.
11. Björnsdóttir S, Gottfredsson M, Thórisdóttir AS, Gunnarsson GB, Ríkardsdóttir H, Kristjánsson M, Hilmarsdóttir I. Risk factors for acute cellulitis of the lower limb: a prospective case-control study. Clin Infect Dis 2005;41 (4):1416–22.
12. Musher DM, Fainstein V, Young EJ. Treatment of cellulitis with ceforanide. Antimicrob Agents Chemother 1980;17 (5): 254–7.
13. Bernard P. Dermo-hypodermal bacterial infections. Current concepts. Eur J Med 1992;1:97–104.
14. Stevens DL. Cellulitis, pyoderma, abscesses and other skin and subcutaneous infections. In: Armstrong D, Cohen J (eds). Infectious diseases. London: Mosby, 1999:2.1–10.
15. McNamara DR, Tleyjeh IM, Berbari EF, Lahr BD, Martinez JW, Mirzoyev SA, et al. Incidence of lower extremity cellulitis: a population-based study in Olmsted County, Minnesota. Mayo Clin Proc 2007;82(1):817–21.

How to cite this article:

Dr. N. Junior Sundresh et al. Ijppr.Human, 2025; Vol. 31 (5): 261-264.

Conflict of Interest Statement: All authors have nothing else to disclose.

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.