

# A Prospective Observational Study on Medication Adherence and Impact of Counselling on Quality of Life Among Cellulitis Patients with Or Without Comorbid Conditions

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## ABSTRACT

**Introduction:** Cellulitis is a soft tissue infection emerging as a major health issue in India. It is a diffuse spreading bacterial infection of the dermis, subcutaneous tissues, and deeper tissues of skin. It is usually caused by staphylococcus or streptococcus species. It is an acute, painful and a potentially serious bacterial infection which has a considerable impact on quality of life.

**Objectives:** The main objective of our study is to assess Medication adherence and provide appropriate patient counselling to reduce the morbidity and recurrence among patients with cellulitis.

**Methodology:** A prospective observational study was conducted for period of six months among the patients with cellulitis. The data was collected from 110 enrolled subjects with the help of self-designed data collection form, from patient's case sheets. Medication adherence was determined using MARS scale and counselling was provided and impact of counselling was assessed through SF-36 scale.

**Results:** A total of 110 patients were enrolled in the study. Majority of patients were males. Patients with age group of >60 years were higher than the age group of 20-60 years. Patients undergoing debridement were more in number when compared to patient advised with only pharmacotherapy. Majority of the patients had not progressed to complications. The major risk factor for cellulitis in these enrolled patients was mechanical trauma and followed by diabetes, and majority of the patients were having poor medication adherence. Patients QOL was assessed and it was improved by providing appropriate counselling. In 14% of patient's cellulitis has re-occurred.

**Conclusion:** In this study we aim to determine the medication adherence and impact of patient counselling on QOL is of prime importance to reduce the morbidity and economic burden on patient and family. In this regard the study was carried out to measure the adherence to treatment and factors contributing to non-adherence to provide proper counselling on medication adherence and lifestyle changes to improve the QOL of cellulitis patients.

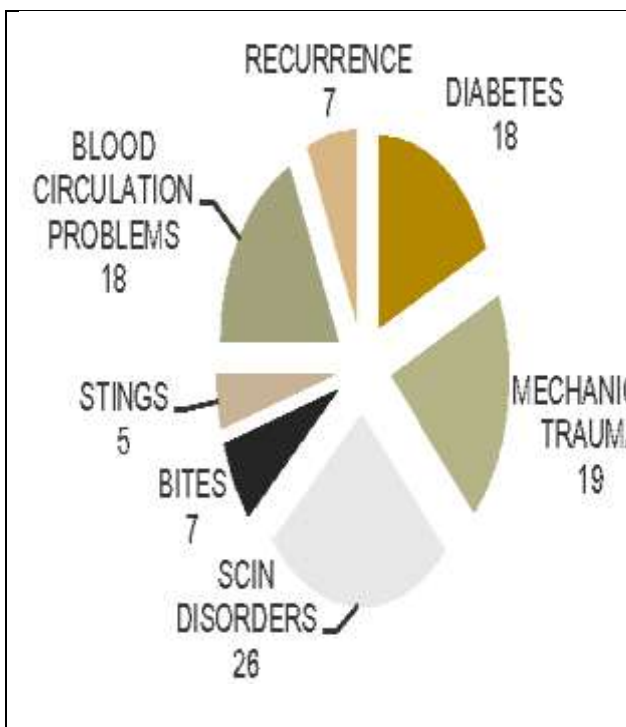
**Keywords:** Cellulitis, quality of life (QOL), counselling, necrotizing fasciitis, medication adherence, sepsis.

**INTRODUCTION**

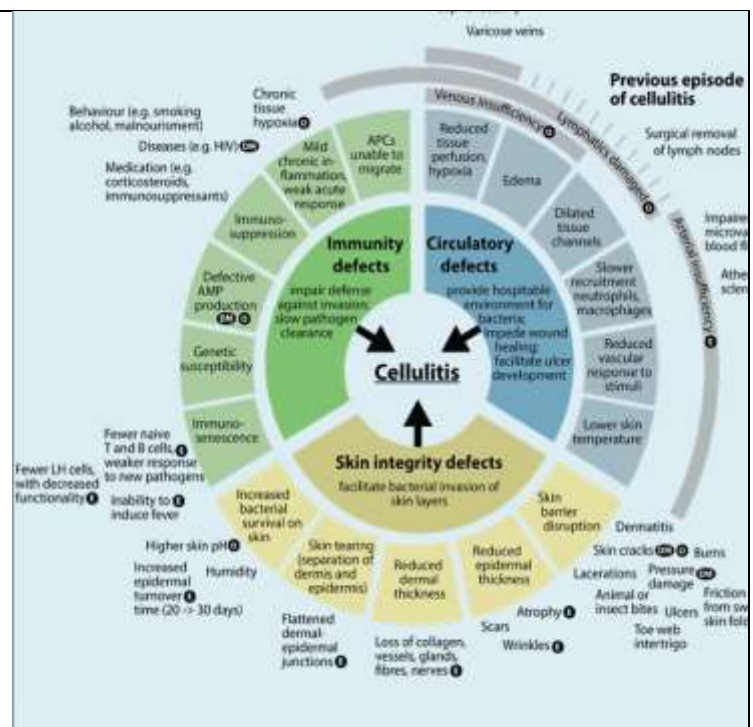
The skin is a vital organ that covers the entire outside of the body, forming a protective barrier against pathogens and various injuries from the environment. It is the largest organ in the body, about 2 mm thick and weighing around six pounds. The skin helps control body temperature, stores water, fat, and vitamin D, and helps the body fight diseases. It also senses touch, pain, and temperature. The skin has three main layers: the epidermis, dermis, and hypodermis (fat layer). Cellulitis is a soft tissue infection emerging as a major health issue in India. Cellulitis is a diffuse spreading bacterial infection of the dermis, subcutaneous tissues, and deeper tissues of skin [1]. And usually caused by staphylococcus or streptococcus species that does not involve the muscle or fascia [3]. It can occur anywhere on the body but occurs most frequently on the lower limbs [2]. It is most often unilateral. Cellulitis is an acute, painful and a potentially serious bacterial infection which has a considerable impact on quality of life. approximately one- third of the patients who have cellulitis suffer recurrent episodes [4]. Cellulitis is a frequent cause of hospital admission of adult patients. Early identification of the risk factors is vital to prevent cellulitis and improve patient health [5].

Cellulitis is the leading cause of morbidity worldwide. It happens about 200 times for every 100,000 people each year. Older and middle-aged adults get it more often than younger people. Men are affected more than women, and it occurs more often in warmer months. Cellulitis affects all races equally [4]. Around 43 million cases happen worldwide every year, and about 1% of people with cellulitis die from it. Most cases (about 70–80%) occur in the lower legs [3].

Studies show that 29% of patients who have previously been admitted to hospital with cellulitis develop a recurrence within a mean of 3 years. [11] Major risk factors for cellulitis in India are represented below:



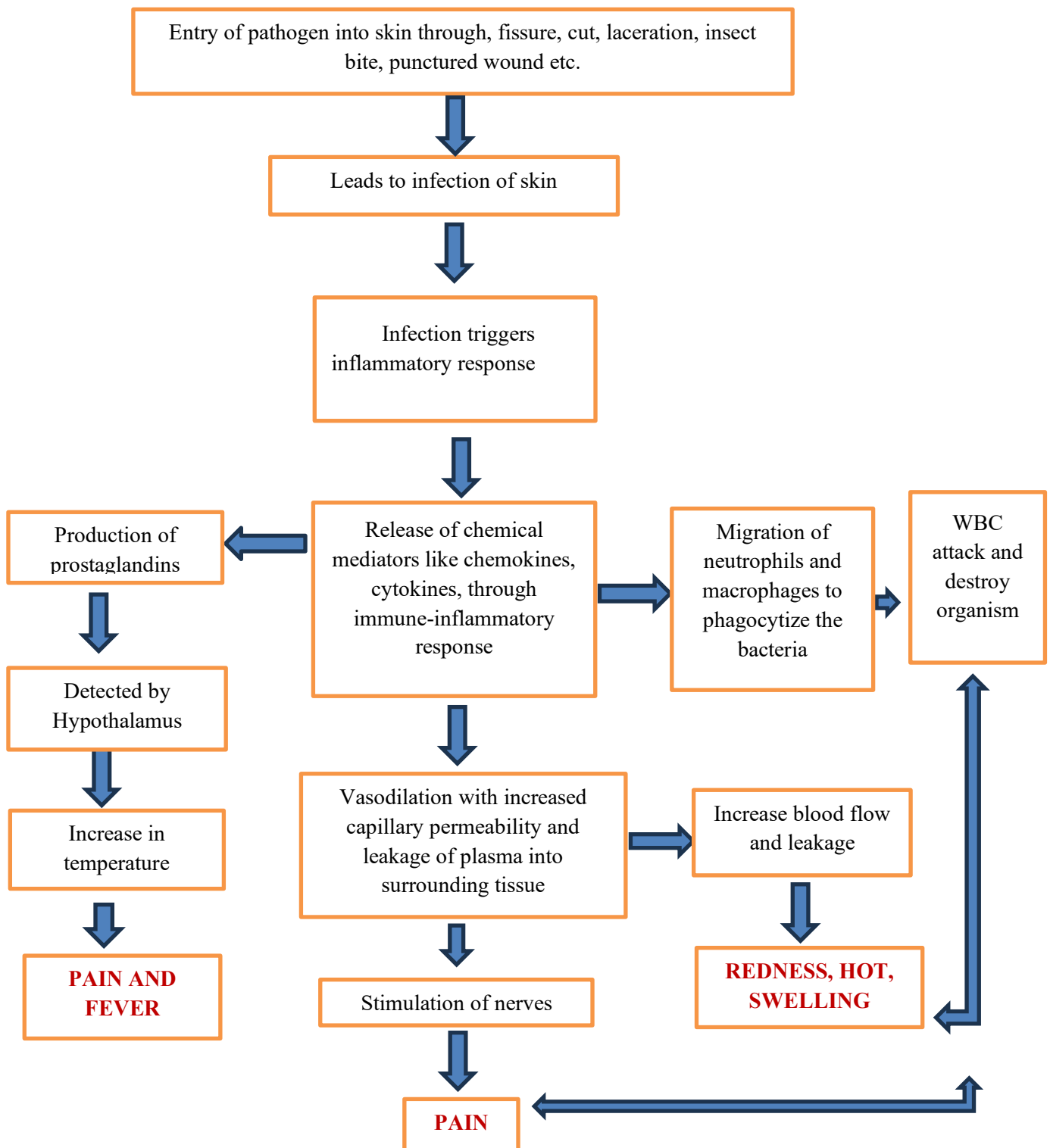
**FIGURE 01: RISK OF RECURRENCE**



**FIGURE 02: RISK FACTORS OF CELLULITIS [6]**

**TABLE 01: TYPES OF CELLULITIS**

TYPES	CAUSES
I. ERYSIPELAS	Group A streptococcus
II. CELLULITIS	Streptococcus aureus Group A streptococcus
III. CELLULITIS IN CHILDREN a) Facial /Periorbital cellulitis b) Perianal cellulitis	Streptococcus aureus Group A streptococcus
IV. CELLULITIS SECONDARY TO BACTERAEMIA	Pseudomonas aeruginosa
V. CREPITANT CELLULITIS	Histotoxic clostridia species
VI. CELLULITIS ASSOCIATED WITH WATER EXPOSURE	Erysipelothrix rhusiopathiae
VII. GANGRENOUS CELLULITIS  A) NECROTIZING FASCITIS 1) Streptococcal gangrene 2) Non-streptococcal necrotizing fasciitis 3) Synergistic necrotizing cellulitis 4) Fournier’s perineal gangrene  B) CLOSTRIDIAL STI’S  C)NON-CLOSTRIDIAL ANAEROBIC CELLULITIS	  Group A streptococcus Pepto streptococcus / Bacteroides  Polymicrobial organism Pepto streptococcus / Bacteroides  Clostridium perfringens  Various Bacteroides Pepto streptococci Pepto cocci
VIII. RARE CELLULITIS 1) Breast cellulitis 2) Ludwig’s Angina	Streptococcus Aureus Group A streptococcus <sup>[IV]</sup>



**FIGURE 03: PATHOPHYSIOLOGY** [7]

**SIGNS AND SYMPTOMS:** Cellulitis can initially be a small, swollen area of pain with redness on the skin. The infection tends to spread to the rest of the body if untreated. [8] Following are the signs and symptoms of cellulitis

**SIGNS& SYMPTOMS**

- PAIN & TENDERNESS
- REDNESS & INFLAMMATION
- SKIN SORE/RASH
- TIGHT GLOSSY SWOLLEN SKIN
- FEELING OF WARMTH IN AFFECTED AREA
- AN ABSCESS WITH PUS
- FEVER

**MORE SERIOUS SIGNS AND SYMPTOMS**

- SHAKING
- FEELING ILL
- LIGHTHEADDEEDNESS
- MUSCLE ACHES
- SWEATING

**COMPLICATIONS:**

**SEPSIS:**

Cellulitis infection (Group A streptococcal) can spread into blood stream cause sepsis. Sepsis is a potentially life-threatening blood infection which is a condition triggered by an infection or injury.

**LYMPHANGITIS/RED STREAKS:**

It is an infection or inflammation of a lymph vessel. It is a complication if a bacterial infection and bacteria can grow rapidly in the lymphatic system and damage the tissue around lymphatic system.

**NECROTIZING FASCITIS:**

It is also called Flesh-Eating disease, it is a infection in the deeper layer of the skin, it can spread in the Fascia and connective tissues the surrounds your muscles and organs and causes tissue death.

**MENINGITIS:**

A deep skin infection can lead to meningitis, the bacteria that enter into the blood stream travel to brain causes bacterial meningitis. Bacterial meningitis can also occur when bacteria directly invade the meninges.

**OSTEOMYELITIS:**

Bacteria might sometimes enter into bone and cause inflammation of bone. It may also spread to bone marrow and tissues near the bone. It can cause severe pain in the affected bone.

**GANGRENE:**

Gangrene is also called as tissue death, when the blood supply is cut if tissue, it leads to death of tissue. This is more common in lower extremities not treated, might need a medical emergency. <sup>[9]</sup>

**TABLE 02: DIAGNOSIS**  
Based on patient condition <sup>[111]</sup>

Class I	Class II	Class III	Class IV
Patients have no signs of systemic toxicity,	Patients are either systemically ill or	Patients may have a significant systemic	Patients have sepsis syndrome or severe life-

have no uncontrolled co-morbidities, and can usually be managed with oral antimicrobials on an outpatient basis.	systemically well but with a co-morbidity such as peripheral vascular disease, chronic venous insufficiency or morbid obesity which may complicate or delay resolution of their infection.	upset such as acute confusion, tachycardia, tachypnoea, hypotension, or may have unstable co-morbidities that may interface with a response to therapy or have a limb threatening infection due to vascular compromise.	threatening infections such as necrotizing fasciitis.
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**TABLE 03: LAB INVESTIGATIONS [III]**

Class II – IV	Selected Patients
FBC ESR or CRP Culture any ulceration or blister fluid	. Blood cultures only class III or class IV. . Streptococcal serology only in refractory cases where diagnosis is in doubt. . Skin biopsy where differential diagnosis includes other inflammatory lesions.

**TREATMENT**

**GENERAL MEASURES**

**ANTI-INFLAMMATORY DRUGS**

- NSAID’S -IBUPROFEN 400MG every 6 hours for 5 days.
- CORTICOSTEROIDS- combining PREDNISOLONE for 8 days and PENICILLIN results in early switch from IV to oral route (Antibiotics)

**ANTIBIOTICS**

- Systemic, Oral antibiotics are used to treat Cellulitis
- Some cellulitis is mild and can be treated with oral antibiotics
- If patients have signs of systemic toxicity, parenteral antibiotics may be needed.

Currently antibiotic treatment is chosen based on cellulitis with or without purulence;

1) NON-PURULENT CELLULITIS: This type does not cause pus, discharge, or abscesses.

**TABLE 04: EMPIRICAL TREATMENT FOR NON-PURULENT CELLULITIS WHICH DOESN’T INCLUDE MRSA:**

DRUG	ADULTS	CHILDREN
ORAL DICLOXACILLIN	500mg/6h	25-5-mg/kg/d in 4 doses
CEFADROXIL	500mg/12h	25-50mg/kg/d in 3- 4 doses
CLINDAMYCIN	300-400mg/6-8h	20-30mg/kg/d in 4 doses
PARENTERAL CEFAZOLIN	1-2g/8 h	100mg/kg/d in 3-4 doses

OXACILLIN	2g/4h	150-200mg/kg/d in 4-6 doses
NAFCILLIN	2g/4h	150-200mg/kg/d in 6-6 doses
CLINDAMYCIN	600-900mg/8 h	25-40mg/kg/d in 3-4 doses

**TABLE 05: EMPIRICAL TREATMENT WHEN BOTH BETA- HEMOLYTIC STREPTOCOCCUS AND MRSA ARE CAUSING CELLULITIS:**

DRUG	ADULT	CHILDREN
CLINDAMYCIN	300-450mg/8h(oral)	40mg/kg/d in 3 doses
AMOXICILLIN+TRIMETHOPRIM SULPHAMETHOXAZOLE	160mg/800mg/12h	8-12mg/kg in 2 doses
AMOXICILLIN+	500mg/8h oral	25-50mg/kg/d in 3 doses
DOXYCYCLINE	100mg/12h oral	4-100mg/kg in 2 doses
AMOXICILLIN+	500mg/8h oral	25-50mg/kg/d in 3 doses
MINOCYCLINE	200mg/d	4 mg/kg in 2 doses
LINEZOLID	600mg/12h oral	30mg/kg in 3 doses

2) PURULENT CELLULITIS This type of cellulitis is presented with pus, discharge, without a drainable abscess.<sup>[10]</sup>

**TABLE 06: EMPIRICAL TREATMENT FOR NON-PURULENT CELLULITIS**

DRUG	ADULT	CHILDREN
CLINDAMYCIN	300-450mg/8h(oral)	40mg/kg/d in 3 -4 doses
TRIMETHOPRIM SULPHAMETHOXAZOLE	160mg/800mg/12h	8-12mg/kg in 2 doses
DOXYCYCLINE	100mg/12h oral	4-100mg/kg in 2 doses
MINOCYCLINE	200mg/d	4 mg/kg in 2 doses
LINEZOLID	600mg/12h oral	30mg/kg in 3 doses

### SURGICAL INTERVENTION

When cellulitis becomes very severe, surgery such as a **fasciotomy** or **debridement** may be needed. These procedures remove all the dead or infected tissue to help the area heal. However, they are not

suitable for everyone because they can cause **pain, bleeding**, and may also remove some healthy tissue. In sharp debridement; a doctor (medical professional) uses scissors or a scalpel to carefully cut away small amounts of dead tissue. This procedure is usually done in a hospital setting. <sup>[10]</sup>

## PATIENT COUNSELLING

### LIFE STYLE MODIFICATION

Cellulitis is a bacterial skin infection that usually responds well to medical treatment, such as antibiotics prescribed by a healthcare professional. While lifestyle changes and home care measures cannot replace medical treatment, they can complement it and help manage symptoms. Here are some suggestions:

- Take prescribed antibiotics: If your healthcare provider has prescribed antibiotics, it's crucial to take the full course as directed, even if symptoms improve before the medication is finished.
- Elevate the affected area: If the cellulitis is in an extremity, elevating the affected limb can help reduce swelling and improve blood circulation.
- Apply warm compresses: Gently applying warm compresses to the affected area can help alleviate pain and promote drainage.
- Keep the area clean and dry: Practicing good hygiene is essential. Clean the affected area with mild soap and water, and pat it dry gently. Avoid harsh or irritating substances.
- Avoid scratching: Scratching can worsen the infection and lead to complications. Keep nails short, and consider wearing soft gloves at night if scratching is a concern.
- Stay hydrated: Proper hydration is essential for overall health and can support the body's immune system as it fights the infection.
- Rest, giving your body enough time to rest is important to help it recover. Avoid putting unnecessary strain on the affected area.
- Wear loose, breathable clothing: Choose loose-fitting clothing made of breathable fabrics to minimize irritation and promote healing.
- Follow any specific recommendations from your healthcare provider: Your healthcare provider may have specific instructions based on your medical history and the severity of your cellulitis. Follow their advice closely.
- It's important to eat a balanced, healthy diet. A healthy diet can also help you to maintain a healthy weight. Reduce processed and high-sugar foods that can lead to the accumulation of toxins and fat in the body, and increase your fiber intake.
- Dehydration can make cellulite more noticeable. Water flushes your body and removes toxins that can cause cellulite. Make a point to increase your water intake. It's recommended that women drink at least nine cups of water each day. Detoxing your body may help minimize cellulite by reducing stored toxins that contribute to cellulite. Try to eliminate or significantly reduce the amount of toxins you put in your body through diet and lifestyle. That includes avoiding things such as smoking and drinking. <sup>[11][12][13]</sup>

### WOUND CARE FOR CELLULITIS PATIENTS

- At times, cellulitis may cause the skin to develop an open wound. Patients should be taught to wash any newly opened areas with a mild soap and water, cover the open area with a clean, sterile bandage and contact their medical provider.

- An open wound is a perfect route for bacteria to cause a cellulitis infection. Cuts, bites, piercings, eczema, chronic ulcers, tattoos, intravenous drug use sites, and athlete's foot are some common ways bacteria may be introduced into the deeper layers of the skin.
- Treated cellulitis should show signs of improvement within ten days. during this timeframe, pain, redness, and swelling should begin to decrease. patients with weakened immune systems or chronic medical conditions may take longer to show signs of improvement and healing.
- Cellulitis wounds that do not improve within seven to 10 days should be reevaluated by a medical professional for possible treatment changes. patients should seek emergency treatment if the infection appears to be spreading quickly, if the skin turns black, or the patient develops fever, chills, nausea, or vomiting.
- Early diagnosis, treatment, and monitoring of cellulitis is the key to successful resolution of symptoms. Empowering our patients with self-care measures and lifestyle modifications can help remove your patients from the cycle of recurrent cellulitis
- Wound care is a crucial part of managing cellulitis, as proper care can prevent the infection from worsening and promote healing. Here are the steps to manage wounds associated with cellulitis:

#### **1 CLEAN THE WOUND**

- Gentle Washing: Clean the wound with mild soap and water. Avoid using harsh chemicals or alcohol-based products, which can irritate the skin.
- Rinse Well: Ensure all soap is thoroughly rinsed away to avoid any residue that could irritate the wound.

#### **2. DISINFECTION**

- Antiseptic Application: Apply an antiseptic solution, such as diluted hydrogen peroxide or iodine, to the wound. This helps kill any surface bacteria and prevent further infection.
- Avoid Overuse: use antiseptics sparingly, as overuse can delay healing by damaging healthy skin cells.

#### **3. MOISTURIZE AND PROTECT**

- Moist Wound Healing: Apply a thin layer of a moisturizing antibiotic ointment, like petroleum jelly or an antibiotic cream, to keep the wound moist, which promotes faster healing.
- Dress the Wound: Cover the wound with a sterile bandage

#### **4. MONITOR FOR SIGNS OF INFECTION**

- Check Daily: Regularly inspect the wound for signs of worsening infection, such as increased redness, swelling, pus, or a foul odour. if you notice any of these signs, seek medical attention immediately.

#### **5. ELEVATION**

- If the cellulitis is in an arm or leg, elevate the limb above the level of your heart as much as possible to reduce swelling and improve circulation.

#### **6. PAIN MANAGEMENT**

- Take over-the-counter pain relievers such as ibuprofen or acetaminophen to manage discomfort and reduce inflammation.

#### **7. FOLLOW MEDICAL ADVICE**

- Antibiotics: Follow your doctor's prescription for antibiotics precisely, even if the wound appears to

improve before the medication is finished.

- Regular Check-Ups: Attend follow-up appointments with your healthcare provider to monitor the progress of the wound and adjust treatment if necessary.

## 8. PREVENTING FURTHER INFECTIONS

Skin Protection: keep your skin moisturized and avoid injuries by wearing protective clothing and footwear. <sup>[14][15]</sup>

### SHORT FORM-36 SCALE (SF-36)

The **Short Form 36 (SF-36)**, was standardized in 1990, is a questionnaire used to measure a person's overall health and well-being.

**Overview:** The SF-36 has **36 questions** that cover **eight areas of health**, grouped into **two main parts**:

- **Physical health**, which includes:
  - Physical functioning (10 questions)
  - Role limitations due to physical health (4 questions)
  - Bodily pain (2 questions)
  - General health (5 questions)
- **Mental health**, which includes:
  - Vitality or energy (4 questions)
  - Social functioning (2 questions)
  - Role limitations due to emotional problems (3 questions)
  - Mental health or emotional well-being (5 questions)

Each area (or scale) is scored from **0 to 100**.

- **0** mean the worst health or **maximum disability**.
- **100** mean the best health or **no disability**.

### Eight Health Domains

1. Vitality
2. Physical functioning
3. Bodily pain
4. General health perceptions
5. Role limitations due to physical health
6. Role limitations due to emotional problems
7. Social functioning
8. Mental health or emotional well-being

The SF-36 is widely used to measure a person's **quality of life (QOL)**.

### How It's Used

People fill out the questionnaire themselves by checking boxes. A clinician or researcher then scores it. There are a few different versions of the SF-36 (some licensed, some free). Both have the same 36 questions but may differ slightly in the **bodily pain** and **general health** sections. It's important to record which version is used and follow the correct **scoring system**.

Scores from each domain are added and converted using a **scoring key** to give an overall score. Two combined scores can also be made:

- **Physical component summary**
- **Mental component summary**

However, experts recommend interpreting these along with the full profile, since the SF-36 measures both **physical** and **mental** health separately rather than as a single total score.

### Scoring and Interpretation

Scoring happens in **two steps**:

1. Each answer is given a numerical value based on the scoring key. Higher numbers mean better health.
2. Each domain score is calculated by averaging the scores of all answered questions in that section.

If a question is left blank, it's not included in the average.

The final scores show how close a person is to the **best possible health** (100) or **worst possible health** (0).<sup>[16][17][18]</sup>

### MEDICATION ADHERENCE RATING SCALE

The Medication Adherence Rating Scale (MARS) is a validated tool to assess patients' adherence behaviors, such as forgetfulness or unauthorized medication changes. Developed in 2000 by Thompson, Kulkarni, and Sergejew, MARS shows strong reliability and uses a 0–10 scale, where higher scores reflect better adherence. It helps identify nonadherence and enables personalized interventions to improve outcomes. Pharmacists play an essential role in promoting adherence by educating patients, simplifying regimens, addressing barriers like cost or misunderstanding, and working with healthcare teams to enhance treatment. They also lead awareness and follow-up programs in communities to improve long-term adherence.<sup>[1]</sup>

### AIM AND OBJECTIVE OF THE STUDY

**AIM:** the aim of the study is to assess medication adherence and impact of patient counselling among patients with cellulitis.

#### OBJECTIVE:

- To analyze the demographic information of the enrolled patients.
- To assess medication compliance.
- To assess underlying factors responsible for causing cellulitis.
- Emphasizing the inter- professional strategies of care for patients suffering with cellulitis.
- To predicts treatment response and support clinical decision making.
- To reduce hospitalization and morbidity.

**METHODOLOGY:** The study employed a prospective observational and questionnaire-based design, conducted over six months in the Department of General Surgery at VIMS or BMCRC, Ballari, Karnataka. The proposed sample size was 100–120 case sheets. Inclusion criteria focused on patients with upper and lower limb cellulitis who provided informed consent. Key exclusion criteria included patients with complications like Diabetic Foot or animal bites, critically ill or pediatric patients, and those with cellulitis in areas other than the limbs. Data was primarily sourced from patient case sheets and through direct interaction with patients. After obtaining Institutional Ethical Committee clearance, investigators collected detailed information (demographics, medications, comorbidities, etc.) during daily ward rounds. The study then assessed outcomes using two main scales: the MARS SCALE to measure medication adherence and the SF-36 SCALE to assess quality of life both before and after patient counselling. Finally, the collected data was analysed statistically using Microsoft Excel, with results presented graphically and in tables.

### 1) MARS SCALE (Medication Adherence Report Scale)

Purpose: To assess the degree to which patients adhere to their prescribed medication regimens.

Function: It is a self-report questionnaire where patients detail their behavior concerning their medication (e.g., forgetting to take doses, stopping medication when feeling better, etc.).

Role in Study: Used to quantify the level of adherence before and after patient counselling.

### 2) SF-36 SCALE (Short Form Health Survey)

Purpose: To assess a patient's quality of life (QoL).

Function: It is a widely used, generic health survey that measures functional status and well-being from the patient's perspective, covering aspects like physical functioning, role limitations, bodily pain, general health, vitality, social functioning, emotional well-being, and mental health.

Role in Study: Used to evaluate the patient's QoL before and after counselling, serving as a measure of the intervention's impact on patient well-being.

## RESULTS:

A Prospective Observational study was conducted among the patients in the Department of Surgery, Vijayanagara Institute of Medical Sciences (VIMS or BMCRC), Ballari, Karnataka. A total number of 110 patients had participated in our study out of which 85(77.2%) subjects were males and 25(22.7%) were females. Among 110 patients, patients with age group 20-40 years were 26(23.6%), the age group of 41-60 years were 33(30%) and the age group >60years were 51(46.3%). Age group of >60 years were high compared to the group of 41-60 and 20-40 years. Among 110 patients, 72(64.45%) patients had undergone debridement and 38(34.54%) were advised pharmacotherapy. Patients undergoing debridement were more in number. Among 110 patients, we had identified among which, 35(31.81%) patients had Diabetes, 25(22.72%) patients had mechanical trauma, 30(27.27%) had diabetes with trauma, 1(0.90%) patient had lymphedema, 3(2.72%) had diabetes with animal bite, 4(3.63%) patients had only animal bite as risk factors. Among 110 patients, 35(31.81%) patients had mechanical trauma, among which 2(5.71%) patients had surgical trauma and 33(94.28%) patients had non-surgical trauma. Among 110 patients, we had observed that 46(41.81%) patients had poor quality of life before counselling, and after counselling only 16(14.54%) patients had poor quality of life, and 26(23.63%) patients had moderate quality of life before counselling and after counselling 34(30.90%) patients had moderate quality of life, and 38(34.54%) patients had good quality of life before counselling and now 60(54.54%) patients had good quality of life after providing counselling. Among 110 patients, 42(38.18%) patients have good medication adherence and 68(61.81%) patients had poor medication adherence; It is assessed as patient suffering with cellulitis have a poor medication adherence overall (poor antibiotic compliance). Among 110 patients, 13(11.81%) have progressed to complication, among which 4 (3.63%) patients are females and 9(8.18%) patients are males. 97(88.18%) patients have not progressed to complication. Among 110 patients, 16(14.54%) patients suffered with recurrent cellulitis, and 94(85.45%) patients have not suffered recurrent cellulitis.

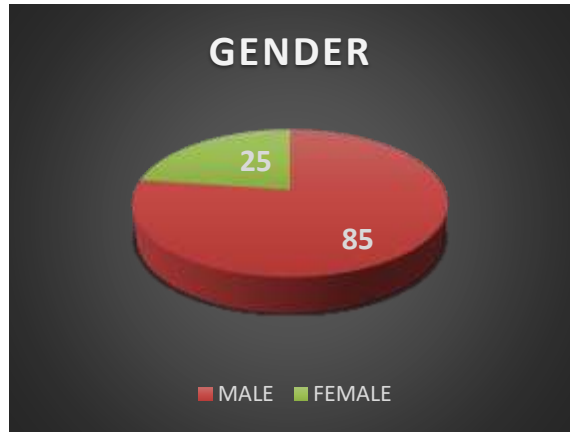


Figure 4: Distribution of patients according to gender.

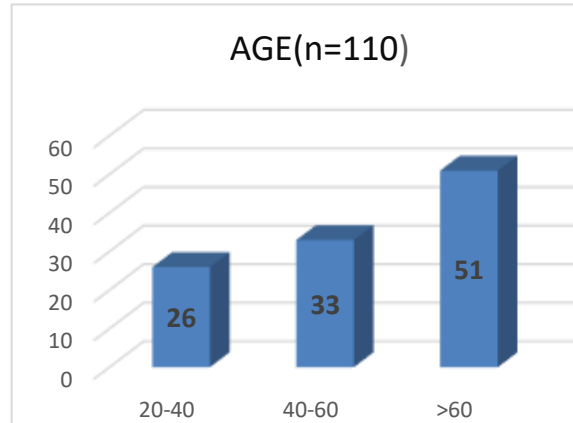


Figure 5: Distribution of patients according to Age.

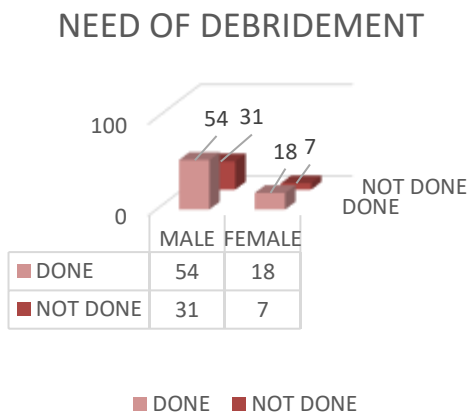


Figure 6: Distribution of patients according to need of debridement.

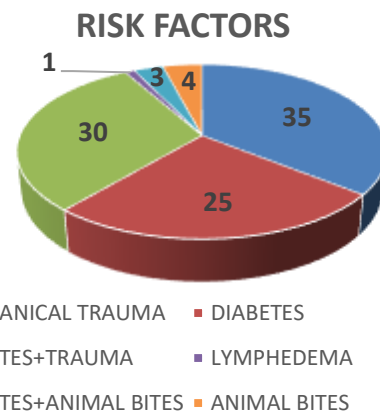


Figure 7: Distribution of patients According to risk factors,

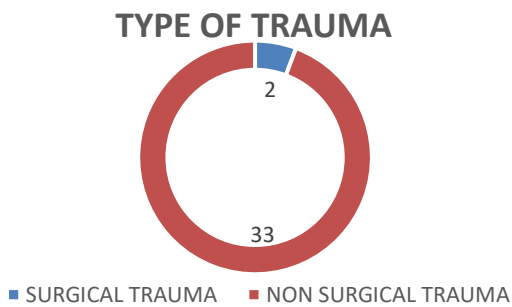


Figure8: Distribution of patients according to type of trauma.

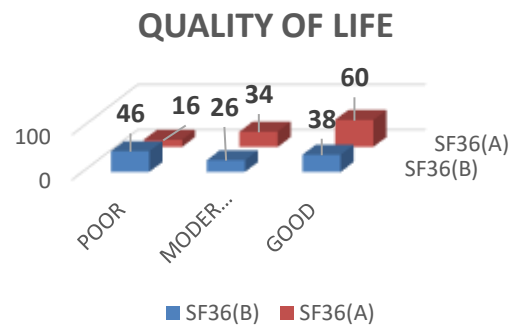
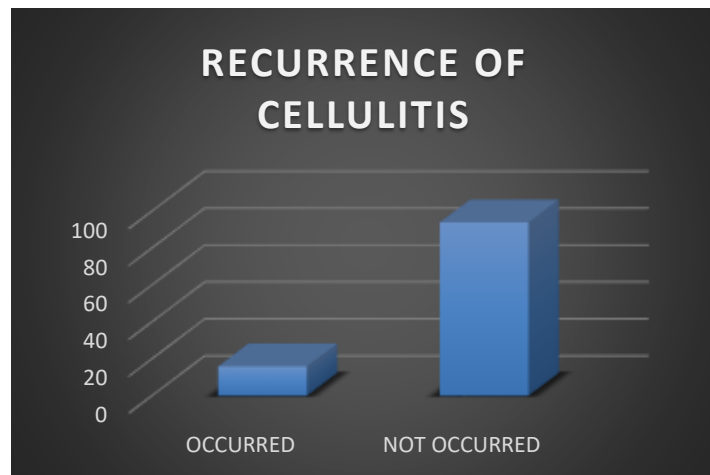
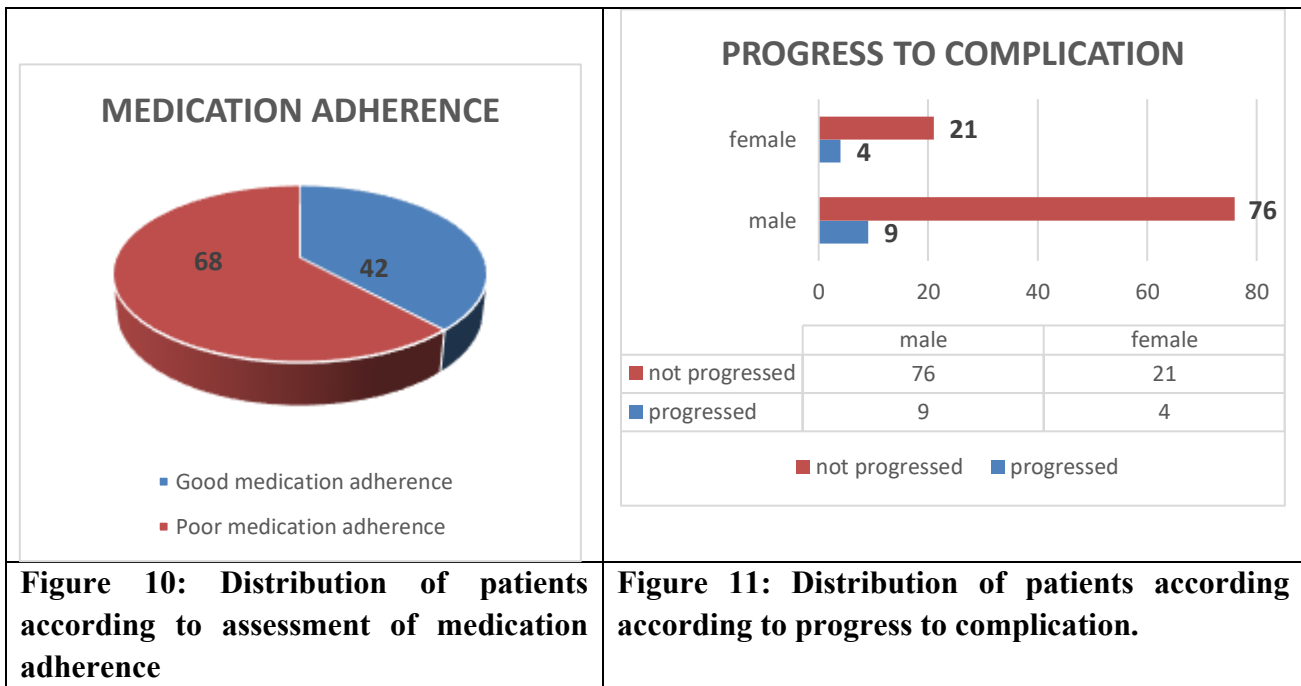


Figure 9: Distribution of patients according to impact of counselling on quality of life bySF-36 QOL scoring scale.



**Figure 12: Distribution of patients according to recurrence of cellulitis**

**DISCUSSION:**

A Prospective observational study was conducted to determine the impact of patient counselling on quality of life, Medication Adherence, Risk Factors, Recurrence, Progress to complications among Cellulitis patients with or without co-morbid conditions. This was done in a population considering age, gender etc.

- The information of patient was acquired with the help of patient case sheets.
- The data was collected from patient case sheets using self-designed data collection form.
- The QOL of patient was improved by providing patient counselling on disease, wound management and care, prevention to reduce recurrence, medication adherence.
- Cellulitis is a leading cause of morbidity worldwide. The incidence is associated with age, gender, occupation, knowledge, on wound care, risk factors.

- To reduce the morbidity due to cellulitis, appropriate counselling on medication adherence and lifestyle changes is required at most to reduce the recurrence which might be due to poor hygiene, lack of knowledge on wound care etc.
- In this study we also identified the number of patients undergone Debridement and the patients who are advised Pharmacotherapy. We can gain insights on how Debridement leads to fast recovery of cellulitis infection.
- In our study containing sample size of 110, males were 85, and females were 25, this includes the patient who is aged between 20-90 years of age. This was compared with study conducted by Tripta.S Bhagat et.al, the results where the incidence of cellulitis is more in males while comparing to females.
- This study included participants aged 20 to 90 years. Most patients were over 60 years old compared to those aged 20 to 60 years. This finding is similar to a study conducted by Julio Collazos et al., where the average age of cellulitis cases was 63.3 years, and 51.8% were male.
- In this study, subjects were grouped based on their risk factors. We found that 35 patients had mechanical trauma, 25 had diabetes mellitus, 30 had both diabetes and mechanical trauma, 1 had lymphedema, 3 had diabetes with an animal bite, and 4 had only an animal bite. These findings were compared to a study by Venkata Narayana et al., where the average age of cellulitis patients was 54.6 years, and the main risk factor was mechanical trauma. In that study, 44% of patients had open wounds, and 34% showed bacterial growth.
- In this study of 110 patients, among that 46 (41.81%) had a poor quality of life (QOL), 26 (23.63%) had a moderate QOL, and 38 (34.54%) had a good QOL before counselling. After counselling, 16 (14.54%) had poor QOL, 34 (30.90%) had moderate QOL, and 60 (54.54%) had good QOL. This shows that counselling improved the patients' quality of life. These results are similar to a study by Emme Teasdale et al., which highlighted the importance of providing information to people with cellulitis about their condition, managing acute episodes, and preventing recurrence.
- In this study of 110 patients, where has 13 (11.81%) developed complications — 4 (3.63%) were female and 9 (8.18%) were male. The remaining 97 (88.18%) patients did not develop any complications. These results were compared to a study by Belen de la Fuente et al., which found that previous cellulitis episodes, non-surgical trauma, venous insufficiency, sepsis, and immunosuppression were linked to how patients responded to treatment, rather than the number or duration of antibiotics used.

## CONCLUSION:

Cellulitis is a soft tissue infection emerging as a major health issue in India. It is a diffuse spreading bacterial infection of dermis, subcutaneous tissue, and deeper dermis. It is a common condition and risk increases with mechanical trauma, diabetes, lymphedema, DVT etc. Lack of wound care, lack of knowledge of disease condition and lifestyle changes lead to cellulitis and its progress to complication such as sepsis, necrotizing fasciitis etc. and leads to recurrence.

In this study we aim to determine the medication adherence and impact of patient counselling on QOL is of prime importance to reduce the morbidity and economic burden on patient and family.

In this regard the study was carried out to measure the adherence to treatment and factors contributing to non-adherence to provide proper counselling on medication adherence and lifestyle changes to improve the QOL of cellulitis patients. We also determined the major risk factor for cellulitis that is mechanical

trauma and diabetes, and cellulitis is more common in males and occurs most commonly in older patients and there is need of debridement for reduction of recurrence of cellulitis. The aim of this study was to reduce the hospital stay and suffering due to cellulitis by providing appropriate counselling to patient to improve their QOL.

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