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PROSPECTIVE COMPARATIVE STUDY OF CONSERVATIVE VERSUS OPERATIVE MANAGEMENT AMONG PATIENT WITH CELLULITIS

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ABSTRACT

INTRODUCTION: Cellulitis is a bacterial infection of the skin and subcutaneous tissue that is more generalized than erysipelas and associated with broken skin and pre-existing ulceration. Mild cases of cellulitis are generally treated with oral antibiotics, Glycerin-MgSO4 dressing & affected part elevation and severe cases required admission & higher antibiotics, skin & blood culture & sensitivity & in case of systemic symptoms & abscess operative management is required.

AIMS AND OBJECTIVES:

- To observe the outcome of conservative and operative patients in view of comorbidity and after treatment complications.
- Following factors are accounting before conclusive outcome.
- To understand the patients characteristics, comorbidity and mode of presentation.
- To study spectrum of organism isolated from patient undergoing conservative or operative management.
- To compare treatment modality and outcome in management of cellulitis.

MATERIAL & METHODS: Data consists of primary data collected by the principal investigator directly from the patients who were admitted from OPD in the GCS medical college and hospital. It was observational study for a period of six months from April 2022 to September 2022 under sample size was 50 cases.

CONCLUSION: We recommended Operative management over Conservative management in cellulitis because single operative incision can release toxic fluid from affected part and can promote faster healing and better recovery and less hospital stay. Patient has less mental trauma, less pain and more economical benefits in Operative management therefore study concludes Operative management is superior Compared to Conservative management. However, conservative management is preferable in early stages of cellulitis.

KEYWORDS: Cellulitis, Glycerin-MgSO4 dressing, Debridement

INTRODUCTION

Cellulitis is a bacterial infection of the skin and subcutaneous tissue that is more generalized than erysipelas. It is usually associated with broken skin or pre-existing ulceration. It is characterized by an expanding area of erythmatous, edematous tissues, that is painful, in association with fever, malaise, leucocytosis. It presents with classic signs of erythma, tenderness and swelling. Erythma taking along lymphatics may be visible (lymphangitis). Commonest causative organism is streptococcus, staph. aureus, gram negative klebsiella, E.coli. & Pseudomonas. Cellulitis affects the skin & the tissues underneath on lighter skin, cellulitis typically appears red or pink. On darker skin tones it may appear dark brown, grey

or purple. Infection can spread to lymph nodes and blood stream. If not treated, cellulitis could become life threatening. There are several risk factors for cellulitis like immune-suppression, diabetes, smoking, trauma, chronic venous or lymphatic insufficiency etc. Cellulitis easily diagnosed by clinical examination supplemented by radiological imaging. Cellulitis more common in older age, poor-socio economic status, poor hygiene & associated with comorbidity like DM, cardiac or renal conditions, etc. In higher socio-economical people due to education, awareness & prompt treatment, cellulitis is less common & less serious.

In India, cellulitis is more common because of increase Smoking, Diabetes, Trauma, Poor Hygiene & Less awareness among people. In case of cellulitis, mild cases are generally treated with oral antibiotics, Glycerin-MgSO4 dressing & affected part elevation on OPD basis. In severe cases required admission & higher antibiotics, skin & blood culture & sensitivity & in case of systemic symptoms & abscess operative management is required. For this observational study we received the records of all the patient in the database who were newly diagnosed with cellulitis from April 2022 to September 2022 period of 6 months.
Study pointed at better clinical outcome in Operative management compared with Conservative group.

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MATERIAL & METHODS

Data consists of primary data collected by the principal investigator directly from the patients who were admitted from OPD in the GCS medical college and hospital. It was observational study for a period of six months from April 2022 to September 2022 under sample size was 50 case.

Inclusion Criteria

- Clinical symptoms, signs and images consistent with the diagnosis of cellulitis.
- All the patients with cellulitis with or without diabetes mellitus and with bacterial etiology.

Exclusion Criteria

- Patients who do not give consent for study.

In our study around 50 patients satisfying the above inclusion and exclusion criteria were selected of which they were divided into two groups based on management.

Group A : Operated patients
Group B : Conservative treated patients

Patients admitted in hospital & they were taken for conservative or operative management.
In conservatively treated patients, daily Glycerin + MgSO4 dressing done, affected part elevation, I.V. Antibiotics & incase of discharge betadine with hydrogen peroxide dressing done.
In operative group, patient taken into operation theatre. Prepared for Spinal anesthesia., General anesthesia, or regional block anesthesia and intervention like debridement, incision and drainage and fasciotomy done.

All operation performed by experienced surgeons, all operative patients underwent pre-operative examinations and patients with contraindications were excluded.
All patients provided written and informed consent.

Before conservative management

After conservative management

Before any surgical intervention

After surgical intervention

Without any intervention

After surgical intervention

OBSERVATION AND RESULTS

Table 1 : Patient Characteristics

Group	**Operative A (n=30)**	**Conservative B (n=20)**
Age (Average)	42	47
Male	19	17
Female	11	3
1 Single Comorbidity	13	9
More than 1 comorbidity	7	5
Mode of presentation		
Cellulitis	23	7
Cellulitis with discharge or abscess	7	13
History of Trauma	11	5

*Comorbidity=(DM, HTN, Cardiac & renal condition & HIV)

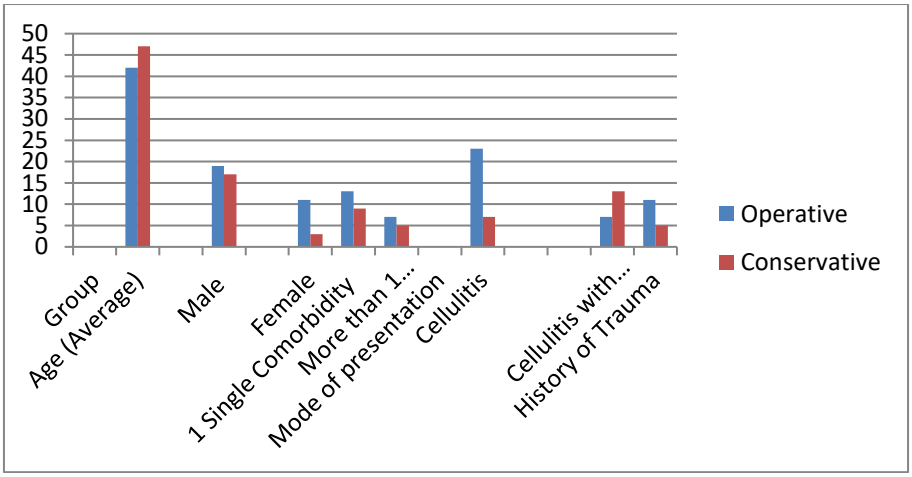


Table 2 :Organism Spectrum (Based on Culture Report)

Organism	Group A Operative	Group B Conservative
Group A Streptococci	12	10
Staphylo.aurus	12	8
E. Coli	4	1
Klebsella	1	1
Pseudomonas	1	0

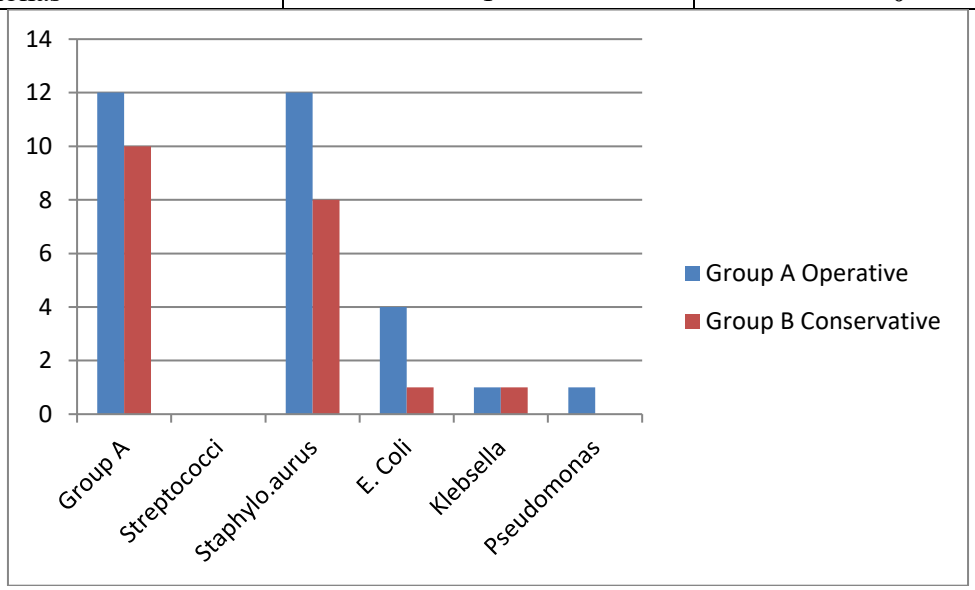
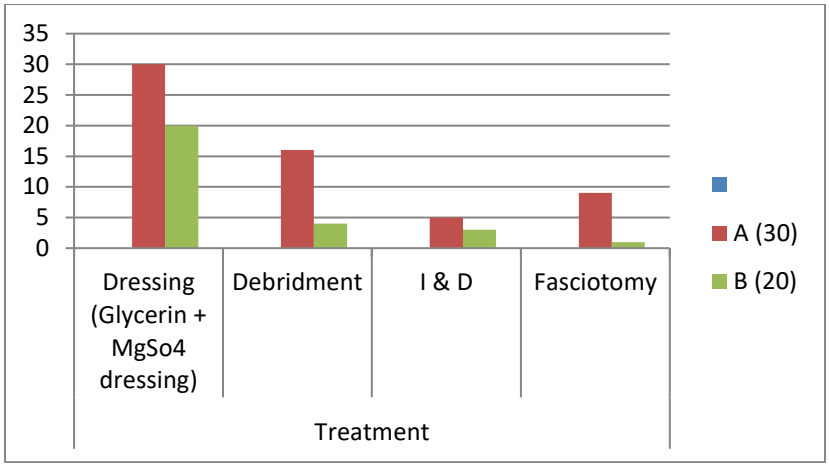


Table 3 : Mode of Treatment

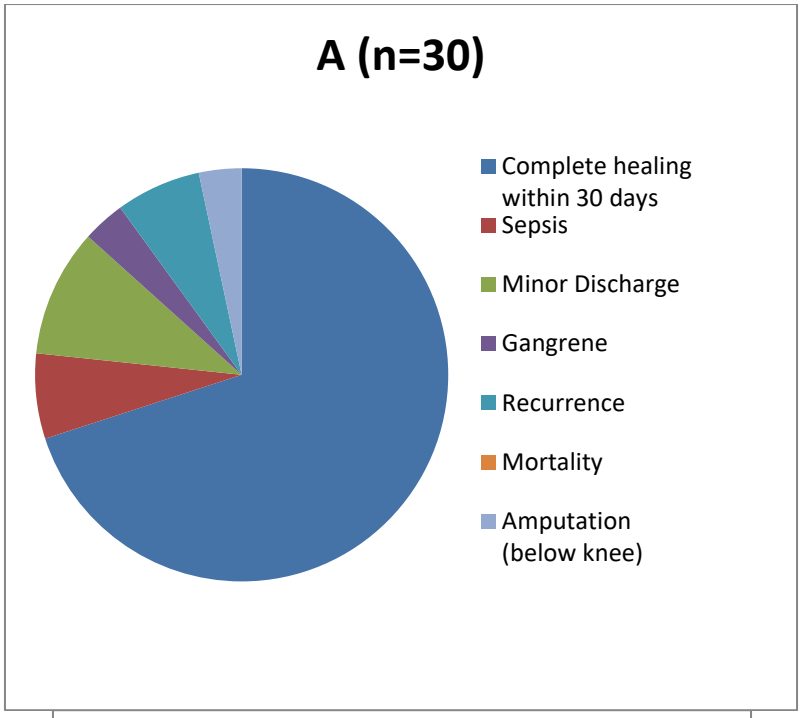
Group	Treatment			
	Dressing (Glycerin + MgSO4 dressing)	Debridement	I & D (incision & drainage)	Fasciotomy
A (30)	30	16	5	9
B (20)	20	4	3	1

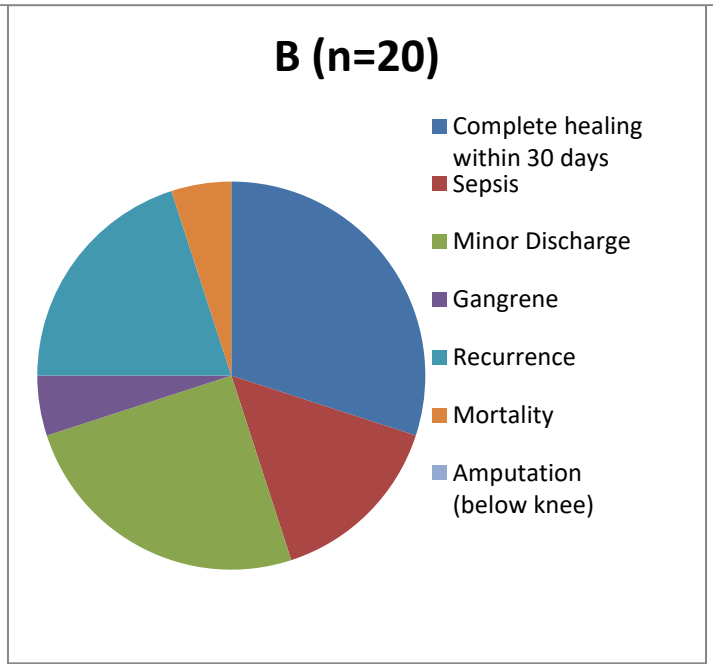


In above mode of treatment 12 patient underwent only one mode of treatment i.e., conservative (Glycerin and MgSO4 dressing). Out of 50 patient 38 patient underwent more than 1 mode of treatment. Therefore, it is suggestive of only conservative (Glycerin +MgSO4 dressing) is insufficient in treatment of cellulitis in majority cases.
Example:- Debridement or incision and drainage followed by Glycerin + MgSO4 dressing.

Table 4 : Outcome

	A (n=30)	**B (n=20)**
Complete healing within 30 days	21	6
Sepsis	2	3
Minor Discharge	3	5
Gangrene	1	1
Recurrence	2	4
Mortality	0	1
Amputation (below knee)	1	0





DISCUSSION

Fifty case of cellulites were studied from April 2022 to September 2022.

(1) Age :
Average of conservative treated patient is 42 and operative patient is 47.

(2) Sex :
Among total patient 36 male &14 female.
Cellulitis more in male patient this is evidently related to diabetes, alcohol smoking, etc.

(3) Comorbidity
In Operative group total 20 among 30 patient is comorbid.
7 patient have more than 1 comorbidity.

In Conservative group total 14 among 20 patients are comorbid & 5 patients have more than 1 comorbidities.
In Conservative patients have a higher comorbidity.

(4) Mode of presentation :
In conservative group among cellulitis 3 patients have discharge .
In operative group : 3 patients have discharge

(5) History of Trauma :
In Operative group 11 among 20 patients have a history of trauma.

(6) Organism spectrum :
In both groups group A streptococci have higher incidence
Staph Aurus prevalence higher in operative groups because of breach in epidermis and comorbidity.
There is 1 pseudomonas positive case in operative group.

(7) Modes of Treatment :
In operative group, 16 patients have debridement 5 patient underwent I & D and 9 patients underwent fasciotomy. In conservative treatment out of 20 patient 4 had to undergo debridement, 3 patient underwent I & D of abscess and patient required fasciotomy. This suggests most patient require surgical intervention for treatment of cellulitis.

(8) Outcome:
In conservative group:
6 patients among 20 patients have complete healing within 30 days.
Sepsis, discharge, gangrene & recurrence higher compared to Operative group.
1 mortality in Conservative group.

CONCLUSION

We recommended Operative management over Conservative management in cellulitis because single operative incision can release toxic fluid from affected part and can promote faster healing and better recovery and less hospital stay. Patient has less mental trauma, less pain and more economical benefits in Operative management therefore study concludes Operative management is superior Compared to Conservative management. However, conservative management is preferable in early stages of cellulitis.

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