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### RESEARCH ARTICLE

#### COMPARISON BETWEEN DRESSING OF CELLULITIS WITH GLYCERIN AND MAGNESIUM SULFATE VERSUS NORMAL SALINE.

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#### Manuscript Info

##### Manuscript History

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##### Key words:-

Cellulitis, Dressing, Normal saline, Glycerin, Magnesium Sulfate, Patients.

#### Abstract

**Background:** Cellulitis is an acute inflammatory condition of the skin that is characterized by localized pain, erythema, swelling and heat. Cellulitis may be caused by indigenous flora colonies of the skin appendages.

**Methods:** This study comprises of patients attending Alluri Sitaramaraju Academy of Medical Sciences (ASRAM Hospital) between June 2018 to January 2019. After proper history taking, examination and investigations patients were admitted and treated.

**Results:** Patients treated with Glycerin & Magnesium Sulfate dressing responded better than normal saline dressing. No complication was observed, healing was faster and reduced hospital stay.

**Conclusions:** In this study, author have observed patients treated with Glycerin & Magnesium Sulfate dressing responded better than normal saline dressing. No complication was observed, healing was faster and reduced hospital stay.

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#### Introduction:-

Cellulitis is an acute inflammatory condition of the skin that is characterized by localized pain, erythema, swelling and heat. Cellulitis may be caused by indigenous flora colonies of the skin appendages eg, *S. aureus* and *S. pyogenes* or by a wide variety of exogenous bacteria.

Relatively, low number of bacteria may cause cellulitis and that the expanding area of erythema within the skin may be a direct effect of extra cellular toxins or of the soluble mediators of inflammation elicited by the host.

Cellulitis is the non-suppurative invasive infection of tissue. Cellulitis occur as bacteria gain access to the epidermis through cracks in the skin, abrasion, cuts, burns, insect bites, surgical incision and intravenous cathedral. There is poor localization in addition to cardinal sign of inflammation, spreading infection typically caused by bacteria such as  $\beta$ -haemolytic staphylococcus tissue destruction and ulceration follows.

#### Methods:-

This study comprises of patients attending Alluri Sitaramaraju Academy of Medical Sciences(ASRAM Hospital) between June 2018 to January 2019.. After proper history taking, examination and investigations patients were admitted and treated.

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**Inclusion and exclusion criteria**

Patients who suffered from cellulitis due to an injury or infection were included in the study. Whereas patients having chronic illness and co morbid condition were not included in the study

After cleaning the area of cellulitis with betadine solution, the inflamed area is covered by Gauze pads, soaked with normal saline. Bandage applied over it and patient is advised rest with the elevation of the affected area.

Magnesium sulfate and glycerin dressing:

It refers to the application of roller bandage coated with 20 grams of magnesium sulfate diluted in 100 ml of glycerin that is applied on the limb oedema. Magnesium sulfate is crystal like substance which helps to reduce the oedema and glycerin is a thick liquid which help to moisturize and nourish the skin.

First dressing was changed after 48 hours and subsequent dressings on alternate days.

Patients were given antibiotic anti-inflammatory along with treatment for associated problems.

**Results:-**

This study includes 60 patients treated at ASRAM Hospital during the period from June 2018 to January 2019. All patients were admitted and treated on IPD basis(Table 1).

**Table 1:-Sex ratio of in-patients**

	Male	Female
No. of patients	36	24
Total	60	

**Table 2:-Age wise distribution of patients.**

Age group (yrs)	Male	Female
35-45	2	1
45-55	3	2
55-65	20	12
65-75	8	7
75-85	3	2

After excluding patients with D86.8 and D86.9 ICD codes and those who lacked sufficient laboratory parameters, 60 patients remained (Table 2). Of these patients, 36 were male and 24 were female. The mean age was  $62.3 \pm 9.09$ ; the age distribution of all patients of all age groups including their age in ranges is shown in the following table.

**Table 3:-Patients undergoing different kinds of dressing.**

	Normal Saline	Glycerin+Magnesium Sulfate dressing
Male	14	22
Female	14	10
Total	28	32

Out of 60 patients, 28 patients underwent normal saline dressing, in that 14 were males and 14 were females. 32 patients underwent glycerin and magnesium sulfate dressing, in that 22 were males and 10 were females (Table 3).

**Table 4:-**Signs of improvement on dressing with normal saline.

	No. of Patients	%	No. of Patients	%	No. of patients	%	No. of patients	%
Decrease in oedema	2	7.1%	7	25%	7	25%	12	42.9%
Decrease in erythema	3	10.7%	6	21.4%	8	28.6%	11	39.3%
Decrease In pain	5	17.9%	5	17.9%	6	21.4%	12	42.9%
Decrease in glistening of skin	7	25%	7	25%	6	21.4%	8	28.6%

Findings	1st dressing / Day 3	2nd dressing/Day 5	3rd dressing/Day 7	After 7 days
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In this study 28 patients were treated with normal saline dressing. Only 4 patients had shown improvement by first dressing where as more number of patients improved by 3rd dressing, 10-12 patients did not recover even after 7 days. (Table 4)

**Table 5:-**Signs of improvement on dressing with Glycerin & Magnesium sulfate.

Findings	1st dressing/3rd day		2nd dressing/5th day		3rd dressing/7th day		After 7 days	
	No. of Patients	%	No. of Patients	%	No. of patients	%	No. of patients	%
Decrease in oedema	13	40.6%	12	37.5%	6	18.5%	1	3.2%
Decrease in erythema	18	56.3%	10	31.3%	4	12.5%	-	-
Decrease in Pain	19	59.4%	9	28.1%	4	12.5%	-	-
Decrease in glistening of skin	21	65.6%	8	25%	2	6.3%	1	3.2%

32 patients were treated with Glycerin & Magnesium sulfate dressing. First dressing was changed after 48hrs which revealed a decrease in symptoms in more than 60% of patients. Pain reduced in maximum no. of patients. Glistening of skin which is a very important sign of cellulitis decreased in most of the patients by 2nd dressing. Only two patients did not show remarkable improvement by 3rd dressing.

### Discussion:-

On comparing the results after normal saline and Glycerin & Magnesium sulfate dressing, it was observed that after first dressing patients with Glycerin and magnesium sulfate dressing improved better. This was followed by fast recovery of pain, swelling and infection.

Edema reduced in 40.6% and pain relived in 59.4% patients after First dressing with glycerin and magnesium sulfate dressing.

Patients undergoing normal saline dressing did not show much improvement after first dressing

**Table 6:-**The comparison of signs of improvement after first dressing.

Signs of improvement dressing (%)	Normal saline dressing (%)	Glycerin+Mag Sulf
Decrease in oedema	7.1%	40.6%
Decrease in pain	17.9%	59.4%
Decrease in erythema	10.7%	56.3%

After first dressing, pain was relieved in 59.4% with glycerin & Magnesium sulfate dressing in comparison to 17.9% with normal saline dressing. Drastic improvement in swelling and erythema was observed after 1st dressing with glycerin and magnesium sulfate dressing.

1. Antibiotics and other associated treatment were remained same:
2. Patients with Glycerin and Magnesium sulfate dressing improved early.
3. Pain relieved earlier than patients with normal saline dressing.
4. Hospital stay is less in patients with glycerin and magnesium sulfate dressing.

**Conclusion:-**

In this study, author have observed patients treated with Glycerin and Magnesium sulfate dressing responded better than normal saline dressing. No complication was observed and responded better than normal saline dressing. Healing was faster.

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