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Comparison Between Dressing of Cellulitis with Glycerin and Magnesium Sulfate Versus Normal Saline

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Abstract
Acute inflammatory cellulitis is a skin ailment characterised by heat, erythema, edoema and localised discomfort. The skin appendages' native flora colonies may be the source of cellulitis. The inflamed region is covered with gauze pads soaked in regular saline after the cellulitis area has been cleaned with betadine solution. It is covered with a bandage the patient is told to rest while elevating the injured region. There were 34 female patients and 46 male patients. The following table displays the age distribution of all patients across all age categories, including their age in ranges. The mean age was 63.2±10.08. Compared to standard saline dressing, those treated with Glycerin and Magnesium Sulphate treatment reacted better. There were no complications, quicker recovery times and shorter hospital stays. The patients in this trial reacted better to glycerin and magnesium sulphate dressing than they did to regular saline dressing, according to the authors' observations. There were no complications, quicker recovery times and shorter hospital stays.

INTRODUCTION

A broad range of external bacteria or native flora colonies of the skin appendages, such as S. aureus and S. pyogenes, may induce cellulitis.

Cellulitis is mostly caused by a very small number of bacteria the growing region of erythema in the skin may be directly caused by excess cellular toxins or soluble mediators of inflammation that the host has induced. The non-suppurative invasive tissue infection is known as cellulitis. Bacteria that enter the skin via wounds, burns, abrasions, insect bites, surgical incisions intravenous catheterization may cause cellulitis. In addition to the classic indications of inflammation, such as poor localization, the infection spreads and usually results in tissue degradation and ulceration due to bacteria like ß-haemolytic staphylococcus.

Numerous external bacteria as well as native flora colonies of the skin appendages, such as S. aureus and S. pyogenes, may cause cellulitis[1]. Cellulitis is mostly caused by a very small number of bacteria the growing region of erythema in the skin may be directly caused by excess cellular toxins or soluble mediators of inflammation that the host has induced[2]. The infection of the dermis and upper subcutaneous layer that is more superficial is called erysipelas. Erysipelas is characterised by well-defined duration, fast development excruciating pain. Cellulitis and erysipelas often coexist[3]. The non-suppurative invasive tissue infection is known as cellulitis. Bacteria that enter the skin via wounds, burns, abrasions, insect bites, surgical incisions intravenous catheterization may cause cellulitis. In addition to the classic indications of inflammation, such as poor localization, the infection spreads and usually results in tissue degradation and ulceration due to bacteria like ß-haemolytic staphylococcus[4]. A related condition is lymphangitis, which manifests as excruciating red streaks in the afflicted region. Leads to toxaemia, chills, fever rigours if left untreated. Antibiotics and the finest anti-inflammatory medications are used in conjunction with the treatment of related issues including diabetes. An essential component of therapy is dressing the cellulitic portion. The normal dressing solution was magnesium sulphate. Many patients' pain and inflammation have been shown to worsen after the use of magnesium sulphate dressings[5]. Saline compression is used for atrophic rhinitis and erysipelas. Normal saline dressing is thought to be utilised in lieu of magnesium sulphate dressing once discomfort and inflammation associated with the dressing are seen[6].

MATERIALS AND METHODS

Patients were hospitalised and given treatment after a thorough history, examination inquiry.

Inclusion and Exclusion Criteria: The research comprised patients who had cellulitis as a result of an infection or injury. In contrast, the research did not include individuals with co-occurring conditions or chronic illnesses.

The inflamed region is covered with gauze pads soaked in regular saline after the cellulitis area has been cleaned with betadine solution. It is covered with a bandage the patient is told to rest while elevating the injured region.

Magnesium Sulphate and Glycerin Dressing: This treatment involves coating the affected limb with a roller bandage that has been diluted with 20 grammes of magnesium sulphate in 100 millilitres of glycerin. The crystal-like material magnesium sulphate helps to minimise oedema, while the thick liquid glycerin helps to nourish and moisturise the skin. After 48 hours, the first dressing was changed thereafter on different days. Antibiotics and anti-inflammatory drugs were administered to the patients along with care for related conditions.

RESULTS AND DISCUSSIONS

This study includes 80 patients. All patients were admitted and treated on IPD basis(Table 1).

After excluding patients with D86.8 and D86.9 ICD codes and those who lacked sufficient laboratory parameters, 80 patients remained (Table 2). Of these patients, 46 were male and 34 were female. The mean age was 63.2±10.08, the age distribution of all patients of all age groups including their age in ranges is shown in the following table.

Out of 80 patients, 38 patients underwent normal saline dressing, in that 19 were males and 19 were females. 42 patients underwent glycerin and magnesium sulfate dressing, in that 27 were males and 15 were females (Table 3).

In this study 38 patients were treated with normal saline dressing. Only 6 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)

42 patients were treated with Glycerin and Magnesium sulfate dressing. First dressing was changed after 48hrs which revealed a decrease in symptoms in more than 61% 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.

Patients showed superior improvement after being dressed with regular saline dressing at initially. A speedy recovery from pain, edoema infection ensued[7]. After the first dressing with regular saline,

Table 1: Sex ratio of in-patients

	Male	Female
No. of patients	46	34
Total	80	

Table 2:-Age wise distribution of patients.

Age group (yrs)	Male	Female
35-45	4	3
45-55	5	4
55-65	22	14
65-75	10	9
75-85	5	4

Table 3: Patients undergoing different kinds of dressing.

	Normal Saline	Glycerin+Magnesium Sulfate dressing
Male	19	27
Female	19	15
Total	38	42

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

	No. of Patients	percentage	No. of Patients	percentage	No. of patients	percentage	No. of patients	percentage
Decrease in oedema	4	10.5%	9	23.6%	9	23.6%	14	36.8%
Decrease in erythema	5	13.1%	8	21.0%	10	26.3%	13	34.2%
Decrease In pain	7	18.4%	7	18.4%	8	21.0%	14	36.2%
Decrease in glistening of skin	9	23.6%	9	23.6%	8	21.0%	10	26.3%
	1st dressing / Day		2nd dressing/Day 5		3rd dressing/Day		After 7 days	
Findings	3				7			

Table 5: Signs of improvement on dressing with Glycerin and Magnesium sulfate.

Findings	1st dressing/3rd day		2nd dressing/5th day		3rd dressing/7th day		After 7 days	
	No. of Patients	percentage	No. of Patients	percentage	No. of patients	percentage	No. of patients	percentage
Decrease in oedema	15	35.7%	14	33.3%	8	19.0%	2	4.7%
Decrease in erythema	20	47.6%	12	28.5%	6	14.2%	-	-
Decrease in Pain	21	50.0%	11	26.1%	6	14.2%	-	-
Decrease in glistening of skin	23	54.7%	10	23.8%	4	9.5%	2	4.7%

76.9% of patients had their pain alleviated and 53.8% of them had less edoema. In this group of patients, no blisters appeared. In this group, open wound healing was more effective and quicker. One retrospective analysis in children and a few case reports in adult patients support the continuous infusion approach[8]. Following their first treatment, patients receiving magnesium sulphate dressing did not exhibit significant improvement.

Even after the third dressing, Gua H *et al*. reported no pain relief[9]. After the second dressing, improvements were seen in erythema and edoema, after seven days, 17.6% of patients showed improvement. Blisters developed in 64.7% of instances the open wounds in this group did not heal rapidly[9]. Bridie O'Sullivan used a hydro fibre dressing to treat cellulitis, which helped to stimulate autolytic debridement and keep the wound moist. Wet dressing may be prescribed by the St. Louis Children's Hospital to aid in the treatment of cellulitis. Vascular constrictions brought on by cool water soaks or compresses assist reduce inflammation, which includes discomfort, redness swelling[10]. Dr. Axe claims that the immune system may stay very reactive throughout adulthood if antibacterials and antibiotics prevent the immune system from learning how to fight against intruders. As a result, bacterial infections are more difficult to avoid[7].

When the outcomes of normal saline and Glycerin and Magnesium Sulphate dressing were compared, it was shown that patients improved more after receiving the first dressing. A speedy recovery from pain, edoema infection ensued.

It is important to highlight that wearing protective footwear won't cure ulcers, instead, bed rest or nonweight bearing must be the primary methods of healing ulcers. But after they heal, it will stop them from happening again it will shield anaesthetic foot from getting ulcers. As previously stated, in the six years that the current design has been in operation, just two patients have had ulcers. One of them, a large guy, worked a 14-hour shift standing on his feet over the Christmas season two years ago, at which point he developed a minor ulcer near the location of a prior ulcer under the third metatarsal head. After two weeks of relaxation, this quickly healed and hasn't come back. The second patient now has a new pressure point under the talus head due to the collapse of his neuropathic mid-tarsal joint. Rest was necessary for this to heal. After his cradle was modified with a new window and padding underneath the pressure region, the problem has not resurfaced. The importance of teamwork cannot be overstated. Examples include the diabetic clinic's routine examination for sensory loss, the necessity of routine chiropody, the continuous surgical supervision the complicated foot, where the

collaboration of the surgeon, chiropodist shoemaker is essential to protecting pressure points and preventing recurrent ulceration. Numerous shoe manufacturers have shown their interest in producing this kind of footwear and insoles upon request, the author will be happy to provide more details.

Dr. Axe claims that the immune system may stay very reactive throughout adulthood if antibacterials and antibiotics prevent the immune system from learning how to fight against intruders. As a result, bacterial infections are more difficult to avoid[7]. The use of antibiotics and other related treatments remained unchanged: • Individuals using a regular saline dressing saw early improvement. • individuals using normal saline dressing had reduced hospital stays, • Open wounds healed more quickly than those using magnesium sulphate dressing and • Pain was eased quicker in these individuals. • Economically, normal saline dressing is less expensive than any other dressing; none of the patients had blisters or burning sensations after applying it.

CONCLUSION

The patients in this trial reacted better to glycerin and magnesium sulphate dressing than they did to regular saline dressing, according to the authors' observations. Magnesium sulphate dressing performed well and no complications were seen. The recovery process was quicker and no complications were noted. The results of this research show that magnesium sulphate dose and timing for individuals experiencing an acute asthma exacerbation varied between western nations' institutions. Using magnesium sulphate was safe for this group of patients.

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