



COMPARISON BETWEEN SALINE DRESSING VERSUS MAGNESIUM SULPHATE DRESSING FOR CELLULITIS PATIENTS

General Surgery

Dr Dhivya Ravikumar Postgraduate, Department of General Surgery, Chettinad Hospital & Research Institute, OMR, Kelambakkam, Chennai, Tamil Nadu, India.

Dr. K. Vivekananda Subramania Professor, Department of General Surgery, Chettinad Hospital & Research Institute, OMR, Kelambakkam, Chennai, Tamil Nadu, India. *Corresponding Author

Dr. K. Ramasubramanian Professor, Department of General Surgery, Chettinad Hospital & Research Institute, OMR, Kelambakkam, Chennai, Tamil Nadu, India.

KEYWORDS

INTRODUCTION

Cellulitis is an acute inflammation of the subcutaneous tissue and dermis. It is usually characterised by warmth, erythema, swelling and severe pain. Cellulitis has significant morbidity and healthcare costs.

Prompt diagnosis and treatment leads to faster recovery and risk of complications can be reduced.

Patients with cellulitis suffer from long standing oedema. By reducing oedema - It improves venous return and reduces recurrence of serious infection.

- 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 localisation in addition to cardinal sign of inflammation, spreading infection typically caused by bacteria such as β -haemolytic staphylococcus tissue destruction and ulceration follows. Lymphangitis is a part of similar process and presents as painful red streaks in affected area. If not treated leads to toxemia chills fever and rigor. Treatment includes anti-biotic, anti-inflammatory best to the part along with the treatment of associated problems like diabetes. Dressing of cellulitis part is important part of treatment. Dressing was usually done with Magnesium sulphate.

- It has been observed that many patient's inflammation and pain aggravated after Magnesium sulphate dressing
- For erysipelas and atrophic rhinitis saline compression is used. After observing pain and inflammation of Magnesium sulphate dressing, normal saline dressing is considered to be used in place of Magnesium sulphate

AIM AND OBJECTIVE

Purpose of this study is to compare the effectiveness between saline dressing versus magnesium sulphate dressing for cellulitis patients

MATERIALS AND METHODS

- Study Method:
Hospital Based Prospective Study
- Study Period:
Duration from December 2020 to December 2021
- Study Population:
Patients presenting with signs and symptoms of cellulitis attending OPD or admitted in general surgery department in Chettinad hospital and research institute were studied

Inclusion Criteria

- Patients aged >18 years.
- Diabetic patients clinically diagnosed with cellulitis of limb

Exclusion Criteria

- Patients with known allergies to $MgSO_4$ and Glycerin.
- Non-diabetic patients with cellulitis.
- Patients with co-existing necrotising fasciitis, folliculitis, septic

bursitis, septic arthritis, carbuncles and furuncles

METHODOLOGY

20 Patients presenting with signs and symptoms of cellulitis attending OPD or admitted in general surgery department in Chettinad hospital and research institute were studied.

A detailed history was taken. All patients were routinely started on intravenous antibiotics. Patients were divided into 2 groups based on saline dressing and magnesium sulphate dressing.

Effectiveness between both the groups were compared using the following criteria :

- Presence of wrinkling
- Absence of signs of inflammation
- Decrease in oedema
- Decrease in erythema
- Decrease in pain
- Decrease in glistening of skin

RESULT

- This study includes 20 patients treated at chettinad hospital and research institute during the period of one year from December 2020 to December 2021. In which 10 patients were treated with normal saline dressing and 10 patients were treated with magnesium sulphate dressing.
- First dressing for patients with normal saline dressing and magnesium sulphate dressing were changed after 48 hours
- In this study 10 patients were treated with normal saline dressing. First dressing was changed after 48hrs which revealed a decrease in oedema in 50% of the patients. Pain reduced in maximum no. of patients. Glistening of skin which is a very important sign of cellulitis decreased in almost all patients by 2nd dressing. Two patients did not show remarkable improvement by 3rd dressing. Glistening of skin which is a very important sign of cellulitis decreased in all patients by 2nd dressing.
- 10 patients were treated with Magnesium sulphate dressing. Only 3 patients had shown improvement by first dressing where as more number of patients improved by 3rd dressing, 1-2 patients did not recover even after 7 days.

DISCUSSION

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

Oedema reduced in 50% and pain relived in 40% patients after First dressing with normal saline. Healing of Open wound was better and faster in this group.

Patients undergoing Magnesium Sulphate dressing did not show much improvement after first dressing.

Bridie O Sullivan manage cellulitis by hydrofibre dressing which maintained the moist wound environment and promoted autolytic debridement. Acc to St Louis children hospital wet dressing may be ordered to help treat the cellulitis. Cool water soaks or compresses causes vessels to constrict, get small which helps lessens inflammation that is swelling, pain and redness.

According to Dr Axe, when antibacterials and antibiotics prevent the immune system from learning how to defend against invaders, the immune system can remain highly reactive throughout the adult years. This makes it harder to prevent bacterial infection. Antibiotics and other associated treatment were remained the same.

Patients with normal saline dressing improved early.

- Pain relieved earlier than patients with Magnesium sulphate dressing.
- Open wounds healed faster in patients with normal saline dressing.
- Patients with normal saline dressing has less hospital stay
- None of the patients developed blisters and burning sensation on dressing with normal saline.
- Economically normal saline dressing is cheaper than any other dressing.

CONCLUSION

In this study, patients treated with normal saline dressing responded better than Magnesium sulphate dressing.

Overall hospital stay of patients with cellulitis who was treated with saline dressing was comparatively lesser than the patient with cellulitis who was treated with magnesium sulphate dressing. Healing was faster, No complication was observed and reduced hospital stay.

REFERENCES

1. Figtree M, Konecny P, Jennings Z, Goh C, Krill's SA, Miyakis S: Risk stratification and outcome of cellulitis admitted to hospital. *J Infect.* 2010; 60:431-9.
2. Carter K, Wilburn S, Featherstone P. Cellulitis and treatment: a qualitative study of experiences. *Br J Nurs.* 2007;16:S22-S24, S26.
3. Sydow M, Crozier TA, Zielmann S. High-dose intravenous magnesium sulfate in the management of life-threatening status asthmaticus. *Intensive Care Med.* 1993;19(8):467-71.
4. Eriksson B, Jorup-Rönström C, Karkkonen K, Sjöblom AC, Holm SE. Erysipelas: clinical and bacteriologic spectrum and serological aspects. *Clin Infect Dis.* 1996;23:1091-8.
5. Keller EC, Tomecki KJ, Alraies MC. Distinguishing cellulitis from its mimics. *Cleve Clin J Med.* 2012;79:547-52.