



**A COMPARISON OF USE OF EUSOL AND SILVER SULFADIAZINE
IN MANAGEMENT OF BURNS WOUNDS**

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ABSTRACT

Introduction: Maharashtra's rural outskirts show's major cases of burns resulting in significant morbidity and mortality. In Krishna Institute of Medical Sciences Karad this study is done to evaluate use of EUSOL for local application in dressings of burns and it's outcome and efficiency compared against use of silver sulfadiazine for local application in dressings of burns and it's outcome with efficiency. EUSOL in this study is diluted with normal saline in ratio EUSOL:NS=1:4 to reduce pain and irritation caused due to EUSOL

Methods: Total of 200 patients of burn injury caused due to various etiology are participated in this study. These patients having total burn surface area 10% to 40%. The patient's who were treated with EUSOL kept in group A (n=100). The patient's who were treated with silver sulfadiazine kept in group B (n=100). Dressings of patients in both groups done on alternate days by using above mentioned agents respectively for 6 weeks from date of admission. At interval 2 weeks; wound healing has been assessed and swabs taken from wound for culture and sensitivity. At completion of 6 weeks, A thorough assessment of

patient's burns wound done in view of wound healing, secondary infection, episodes of leucocytosis and outcome noted.

Result: In group A; which were treated with Local Application of EUSOL, 66/100 patients achieved complete healing. In group B; which were treated with Local Application of silver sulfadiazine, 28/100 patients achieved complete healing. Incidence of secondary infection was significantly less in group A (EUSOL) than in group B (Silver sulfadiazine) (Provided dressings were done using All Aseptic Precautions)

Conclusion: The EUSOL which is used in dressings for Local application has better shows outcome in terms of

- 1) Achieving complete healing of burns wound
- 2) has less incidence of secondary infection (Provided dressings were done using All Aseptic Precautions)
- 3) has relatively low cost and easily available

Compared to Local application of Silver sulfadiazine

INTRODUCTION

This study was conducted in Krishna institute of medical sciences which is located rural outskirts of Maharashtra where patients does not afford to use of conventional local antibiotics such as Silver Sulfadiazine in burns and incidence of burn injuries are very common. Main cause of morbidity & mortality in burns is Infection. Different types of topical agents such as EUSOL has been successfully used to avoid complications in burns wound [1-4].

EUSOL is used as effective agent in wound dressing of chronic ulcers [1].

It quickly reduces the inflammation, swelling & infections. It also separates slough of necrotic tissue and avoid the need of debridement [1, 9, 11].

In this modern times multidisciplinary approach to treat burns costs very high with

need of multiple grafting surgeries and collagen dressings [6, 8].

This study is Randomized control trial for using cheap Local agents such as EUSOL to decrease cost and better healing and to secondary infection.

EUSOL in this study is diluted with normal saline in ratio EUSOL:NS=1:4 to reduce pain and irritation caused due to EUSOL as Direct Local application of EUSOL is extremely painful.

Method:

This study is Randomized control trial in conducted in Burn Ward of Department of General Surgery in Krishna Institute of Medical Sciences, Karad

Inclusion Criteria

Burns patient admitted in ward in between 1 July 2020 to 31st June 2021 having

1. Total burn surface area in between 10% to 40%.

2. Patient of Both sex and all aetiology of burns.

Exclusion criteria

Remaining 198 patients who are not competing all inclusion criteria's

(1) Those who either got discharged within one week of admission or expired.

(2) Patient who refused treatment and taken Discharge against medical advice

(3) Full thickness electric burns (muscle or bone deep)

(4) Children as EUSOL can be painful

Methods:

A protocol for management of burns was made It includes

1. Resuscitation
2. Correction of fluid loss and electrolyte imbalance
3. Antibiotics support
4. Adequate analgesia
5. Adequate Nutrition
6. Physiotherapy

All patients participating this study treated conservatively using this protocol. Surgical procedures like 1.Wound debridement 2. STSG (Split thickness skin grafting) 3. Collagen dressing are avoided.

Patients are divided in two groups using single blinding randomisation method, each group i.e. Group A and Group B contains 100 patient's.

In Group A (n=100) burns wounds treated with local application of EUSOL which was diluted with NS in ratio 1:4 followed by sterile dressing on alternate day. In Group B (n=100) burns wounds treated with local application of Silver sulfadiazine followed by sterile dressing on alternate day.

In each group burns wound were washed with sterile NS beforehand Local Application of EUSOL or Silver sulfadiazine to remove necrotic tissue and blisters were ruptured using sterile needles.

In study Group A - after 5 to 6 dressings all necrotic tissues were removed and healthy granulation tissues formed, it took another 4 to 5 dressings to heal completely. In study Group B - after 7 to 8 dressings all necrotic tissues were removed and healthy granulation tissues formed, it took another 6 to 7 dressings to heal completely.

At Interval of 2 weeks all patients assessed using following parameters

1. Wound Examination
2. CBC and RFT
3. Culture and sensitivity

In both groups temperature, blood pressure and pulse rate charting kept four hourly to record episodes of fever and early signs of sepsis.

Outcome variables:

Following are the outcome variables of interest

1. Wound healing status at 6th week

2. Incidence of secondary infection

RESULT:

In Group A - 98 patients completed the 6 weeks of treatment and 2 patients expired following multiple organ dysfunction syndrome.

In Group B - 97 patients completed the 6 weeks of treatment and 3 patients expired

following multiple organ dysfunction syndrome.

Expired patients from both groups were excluded from outcome analysis.

In Group A 66 subjects achieved desired complete healing of burns wounds at sixth week and in Group B 28 subjects achieved desired complete healing of burns wounds at sixth week

Table 1: Shows leucocyte count comparison in two groups that shows less incidence of leukocytosis in Group A than Group B

Total Leukocyte count	Group A	Group B
Normal Range = 4,000 to 11,000 /cu.mm	54	48
11,000 to 20,000 /cu.mm	40	42
More than 20,000 /cu.mm	6	10

Table 2: Shows culture and sensitivity reports compared in two groups that shows less incidence of secondary infection in Group A than Group B

Culture and Sensitivity	Group A	Group B
On admission		
After 2 nd week	New organism detected in 8 pts	New organism detected in 10 pts
After 4 th week	New organism detected in 2 pts	New organism detected in 5 pts
After 6 th week	New organism detected in 0 pts	New organism detected in 0 pts

DISCUSSION

In group A; which were treated with Local Application of EUSOL, 66/100 patients achieved complete healing.

In group B; which were treated with Local Application of silver sulfadiazine, 28/100 patients achieved complete healing.

Incidence of secondary infection was significantly less in group A (EUSOL) than in group B (Silver sulfadiazine) (Provided dressings were done using All Aseptic Precautions).

CONCLUSION

The EUSOL which is used in dressings for Local application shows better outcome in terms of

1) Achieving complete healing of burns wound

2) has less incidence of secondary infection (Provided dressings were done using All Aseptic Precautions)

3) has relatively low cost and easily available

Compared to Local application of Silver sulfadiazine

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