

Burn Wound Management with Papain Urea as Debriding Agent A Clinical Study at Guntur Medical College hospital Guntur.

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Being a major centre for Plastic Surgery and Burns many patients attend the burns centre daily.A significant number get admitted for treatment as in-patients. The debridement of burn wounds is required in almost all the patients.

The methods of debridement available are :

1) Surgical, 2) Chemical, 3) Mechanical, 4)Autolytic, 5) Biological .

Early Debridement is beneficial in the management of burn wounds. We used chemical debridement of the burn wounds, using Papain Urea in comparison to regular dressing with Silver Sulphadiazine ointment.

- To accelerate the removal of eschar.
- To reduce the cost of treatment.
- To know the efficacy of Papain Urea as debriding agent.

The debridement either autolytic or mechanical is delayed and painful. Surgical debridement is stress on operating room and surgeon.

MATERIALS AND METHODS

It is a random study done during the period from September 2023 to March 2024 on 40 patients. The Control group was dressed with SSD ointment while the Test group with Papain Urea ointment. Routine investigations were done on patients, including LFT and RFT on all patients. Wound cultures were done at regular intervals. About 1gm of Papain Urea ointment was applied over 1% BSA of wounds.

Each gram of Papain Urea contains Papain IP (5,21,700 units of activity) and 100mg of Urea IP..

We included patients with the following criteria for the study

- 15% to 30% thermal burns
- 2nd degree deep or 3rd degree burns
- Age group – above 10 to 60years
- Burns over trunk, neck and limbs

and excluded patients with the following criteria:

- Renal failure
- Septicaemia
- Chronic alcoholics
- Diabetes
- Electrical burns
- Inhalation burns

All patients took a bath and the ointment was applied with gloved hands from day 5 onwards to the areas of eschar. Following this, dressing was done. The size of wounds and eschar were measured. The dressing was changed at intervals of 1 to 3 days. The percent reduction in size and eschar were compared for the treatment groups. Signs of inflammation were also noted.

RESULTS

	SSD Ointment (n = 20)	Papain Urea (n = 20)
Age range in years	10 to 52	10 to 40
Median age in years	28	25
Mean age in years	29.5	26
Burns over Trunks + Neck	5	6
Burns over Trunk + Limbs	10	10
Burns over Limbs	6	4
Percentage mean	23.01	26.23

DEBRIDEMENT OF ESCHAR (%)

Reduction in Wound size (%)

	SSD OINTMENT	PAPAIN UREA
Week 1	0	0
Week 2	20	40
Week 3	40	70
Week 4	70	95

DEBRIDEMENT OF ESCHAR BY CLINICAL EVALUATION

Scoring System for Eschar percentage:

76 – 100%	51 – 75%	26 – 50%	11 – 25%	1 – 10%	none
1	2	3	4	5	6

OVERALL WOUND RESPONSE TO TREATMENT BY CLINICAL ASSESMENT

(Assessing granulation, edema, erythema, odour, exudates type and epithelisation)

Week	SSD	Papain Urea
Week 2	2	3
Week 3	3	4
Week 4	4	5

CONCLUSIONS

- In our study, we found that Papain Urea significantly reduced the area of eschar at 4 weeks as measured by planimetry in comparison to SSD ointment application.
- There was a greater degree of granulation tissue and wound reduction seen in the test group compared to the control group.
- These patients tolerated Papain Urea ointment application well.
- Few had initial transient burning sensation.
- 2nd degree deep burns healed well.
- No systemic adverse effects were noted
- Patients had excessive exudate initially and discomfort.
- There was no mortality in the study groups.
- Two patients however discontinued the study due to burning sensation and discomfort.
- One patient developed septicaemia and discontinued
- One patient lost for follow up.





Day 7 of burns before application





Day 14: Papain Urea

References

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