

EUSOL® versus Antibiotic-Loaded Collagen Granules (Co-Mupimet®) as a Dressing Agent in the Management of Traumatic Wounds

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Purpose: Traumatic wounds are one of the common causes of morbidity in orthopaedic patients. To date there is no randomized controlled trial available that compares the healing potential of Edinburgh University Solution of Lime (EUSOL) with mupirocin in collagen granules and Metronidazole (Co-Mupimet®) as a dressing agent. We aim to compare the effectiveness and healing potential of Co-Mupimet® and EUSOL in terms of quantity and quality of granulation tissue formation, pattern of wound discharge, healing potential, or need of secondary procedures like skin grafting or flap coverage.

Methods: This study was approved by the Institutional Ethical Review Board. 130 eligible patients with infected traumatic limb wounds and surgically infected wounds were randomized into the EUSOL group (n = 65) and Co-Mupimet® group (n = 65). Patients with impaired wound healing potential, wound over insensate/ avascular limb, and patients not giving consent were excluded. A wound swab for culture was taken for all cases at the presentation. Size of wound after debridement at initial presentation, at 1st, 2nd, 3rd, and 4th week was measured and the quality and quantity of granulation tissue formation was assessed.

Results: The gender distribution ($P = 0.323$), mode of injury distribution ($P = 0.826$), spectrum of injury ($P = 0.31$), and ratio of culture positives at presentation ($P = 0.71$) among the groups were not significant. The mean age (years), mean wound size at presentation after debridement (cm²), baseline hemoglobin (g/dL), random blood sugar (mg/dL), and serum albumin (g/dL) was 35.11 ± 20.63 , 36.08 ± 28.98 , 10.78 ± 1.79 , 97.76 ± 15.27 , and 5.90 ± 0.84 respectively for EUSOL group, while it was 34.56 ± 19.58 , 37.77 ± 36.97 , 10.88 ± 1.63 , 95.52 ± 12.64 , and 5.96 ± 0.70 respectively for Co-Mupimet® group with the corresponding P values being 0.71, 0.69, 0.92, 0.33, and 0.82, respectively. The P value for ratio of discharging wounds among the EUSOL group and Co-Mupimet® groups at 1st, 2nd, 3rd, and 4th week was 0.20, 0.62, 0.54, and 0.24, respectively. Lesser amount of discharge was seen among wounds dressed with collagen granules ($P > 0.05$). Similarly, the P value for appearance of healthy granulation tissue among the groups at 1st, 2nd, and 3rd week were 0.02, 0.00, and 0.02, respectively. Probability of complete healing at 1st, 2nd, 3rd, and 4th week were 0.16, 0.29, 0.41, and 0.50, respectively, for EUSOL group while they were 0.26, 0.61, 0.61, and 0.40, respectively, for Co-Mupimet® group with their corresponding odds ratio as 1.62, 2.10, 1.48, and 0.80, respectively.

Conclusion: Co-Mupimet® is a better and cost-effective dressing agent as it showed earlier and higher probability of healing with better quality granulation tissue that is ready for skin grafting much earlier. There was also faster reduction in wound size with Co-Mupimet® dressing. This indirectly reduces the hospital stay / treatment cost and use of hospital resources.