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Comparison study of bacterial profile, wound healing, and cost effectiveness in pressure injury patients using treatment honey dressing and hydrogel

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Background: The wound treatment of pressure injury poses great challenges and requires high cost. Manuka honey has been introduced and studied as one of the conventional dressings for pressure ulcer treatment. However, this product is expensive and not widely available. This study aims to use local product honey called Nusantara honey, to prove that the use of local honey has better healing process, bacterial profile, and cost effectiveness, compared to the standard dressing, hydrogel.

Methods: An experimental study was conducted in patients with pressure injury that referred to our division. Parameter of the bacterial profile was taken from deep tissue specimen. The healing process was examined using the pressure ulcer scale for healing (PUSH) tool. Cost was accumulated after all the treatment. Data was analyzed with T-Test or Mann Whitney (if the distribution is not normal), with statistical significance was define as $p < 0.05$.

Results: Of 26 wounds, 12 were randomized to hydrogel and 14 to honey dressing. Characteristics were determined by sex, age, body mass index, level of consciousness, mobilization status, immobilization etiology, comorbidities, grade and location of ulcer, hemoglobin, leukocytes, and albumin level. There was a clinically significant wound size reduction in the use of honey dressing according to PUSH Tool ($p = 0.118$) compared to hydrogel. The bacterial profile and reduction were similar. Honey dressing appeared to be more cost effective in terms of dressing cost ($p < 0.001$) and lower total cost.

Conclusion: The local honey dressing had better wound heal-

ing outcome, although it was not statistically significant. Its capability of decreasing pathogens was similar with hydrogel, with lower dressing cost. Local honey dressing could be a preferable choice as wound dressing in areas where the modern dressings were not available.

Recent publications

1. N Tunjung and Putri NM et al. Closure of meningomyelocele defects using various types of keystone-design perforator island flaps. *Archives of Plastic Surgery*. (2021); 48:3.
2. N Tunjung and Putri NM. Keystone Flap for Reconstruction of Sacral and Ischial Pressure Injury. *Jurnal Plastik Rekonstruksi*: Vol. 8 No. 1 (2021): 3
3. Tunjung, N, Kreshanti P, Saharman, Y R, et al. 2020. Clinical Evaluation of Locally Made Flocked Swabs in Response to the COVID-19 Pandemic in a Developing Country. *International Journal of Technology*. Volume 11(5), pp. 878-887.

Speaker Biography

Narottama Tunjung has completed his plastic reconstructive and aesthetic surgery training program from the Faculty of Medicine Universitas Indonesia. Currently, he holds the position of medical and teaching staff at the burn and wound section of plastic reconstructive, and aesthetic surgery division, Dr. Cipto Mangunkusumo Hospital, Faculty of Medicine Universitas Indonesia. He has several international publications and serves as speakers and instructors in various plastic surgery events and trainings. He has interest in the field of research of burn and wound, scar treatment, tissue repair, regenerative medicine, and surgical simulation. He is also the editor-in- chief of *Jurnal Plastik Rekonstruksi*, the most prominent plastic surgery journal in the country.

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