A Randomized Controlled Trial of Topical Lidocaine Application to Epidermal Autograft Donor Sites in Acute Burn Patients

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10:30 – 10:45 am

Author and Co-authors:

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Objective:

Upon completion of the lecture, attendees should be better prepared to:

- Discuss the impact of intraoperative topical anesthetic on post-operative pain in patients undergoing autologous skin grafting for treatment of acute burn injury.
- Examine the safety profile of this treatment in terms of both local and systemic effects.

Abstract:

Introduction: Donor site pain remains one of the greatest challenges in managing a patient treated with excision and grafting of burn wounds. Intra-operative application of topical anesthetic has been advocated by many as a way to diminish the donor-site pain. We sought to evaluate the impact topical application of local anesthetic would have on our patients both in terms of efficacy in mitigating post-operative pain. At the same time, we studied to conform and document the safety of this practice both in terms of systemic absorption and impact on local wound-healing.

Methods: We performed a double-blinded randomized controlled trial at our burn center. Patients undergoing excision and auto-grafting for treatment of small-to-medium sized burn wounds between September 2014 and October 2017 were recruited for this study. Patients electing to participate were randomized to treatment with topical lidocaine w/epinephrine (experimental group) or saline with epinephrine (control group). Post-operatively, pain was assessed serially using a 10-point scale, and all patients were followed until healing to identify the incidence of wound infection, time to wound-closure, and serum lidocaine levels.

Results: No statistically significant difference was found between the placebo and treatment groups with respect to incidence of wound infection and wound healing. While serum lidocaine levels between the placebo and treatment groups did vary, the levels noted in the treatment group stayed well below levels defined as safe.

There was a difference in the pain score reported between the two groups at all time-points measured. The mean pain scores between the placebo and treatment groups at 30 minutes, 2 hours, 6 hours, and 24 hours following the operation were as follows: 8.31 vs. 6.19, 6.44 vs. 4.12, 5.19 vs. 3.88, and 3.80 vs. 2.95, respectively. These differences were not statistically significant.

Discussion: Collectively we determined that intraoperative use of lidocaine may play

	a role in modulating post-operative pain at the donor graft site. The fact that these results were not statistically significant could be explained by the fact that both sets of patients were medicated with narcotics as needed to treat pain. We are actively currently at work reviewing narcotic consumption among the two groups to determine whether the equivalent pain outcomes are balanced by an opioid-sparing effect. **References and Resources:** Sinha S, Schreiner AJ, Biernaskie J, Nickerson D, Gabriel VA. Treating pain on skin graft donor sites: Review and clinical recommendations. J Trauma Acute Care Surg. 2017 Nov;83(5):954-964.
Disclosure:	Joshua S. Carson – No Relevant Financial Relationships to Disclose William Freeman – No Relevant Financial Relationships to Disclose Jennifer Mallek – No Relevant Financial Relationships to Disclose Tera Thigpen – No Relevant Financial Relationships to Disclose Adrian Ching – No Relevant Financial Relationships to Disclose Brenda Fahy – No Relevant Financial Relationships to Disclose David W. Mozingo – No Relevant Financial Relationships to Disclose