Retrospective audit of analgesia for 1st SSG Surgery in the Victorian Adult Burns service The Alfred Hospital 2014-2017

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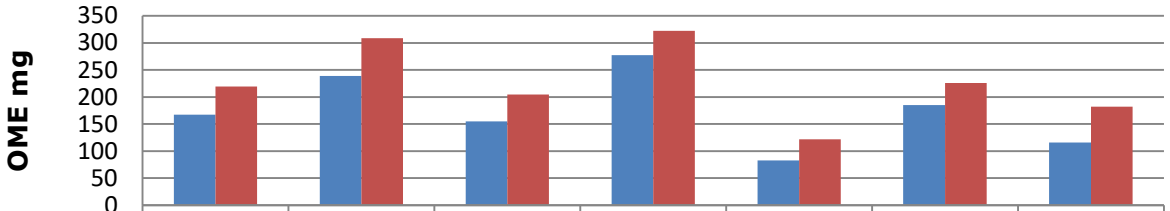
Background

- There is global interest in reducing reliance on opioid-based analgesia (1)
- Focus on treating the neuropathic component of burns pain is increasing (2)
- **Donor site pain** is described as the most debilitating pain experienced during burns injury and is most severe 24 hours post SSG surgery(3,4). Donor site pain has neuropathic descriptors
- Poorly controlled acute pain is a risk factor for development of chronic pain (5). TBSA correlates with incidence of persistent pain(6,7)
- Identifying non-opioid analgesia that may reduce acute pain is a priority for burns pain management
- **Study Aim:** To identify analgesic interventions that reduce pain score post 1st SSG surgery

Method

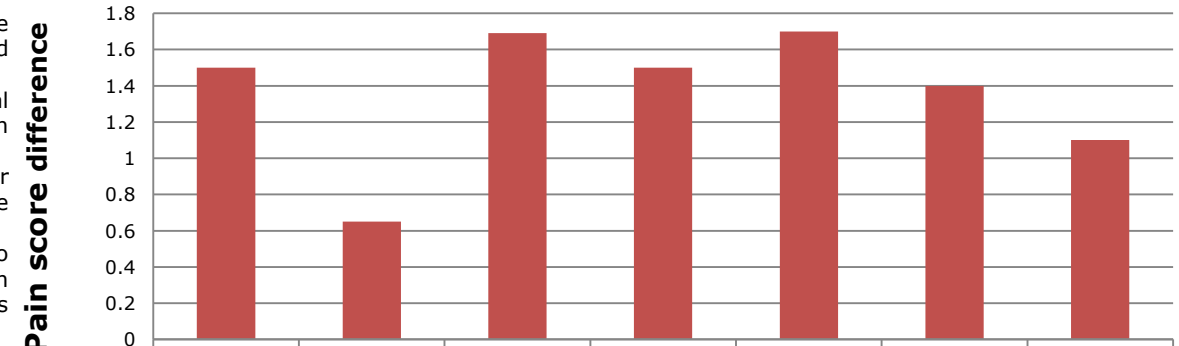
Study population: Data was obtained from the Victorian Adult Burns Service Registry The Alfred Hospital
All patients from 2014 to 2017 with ≥ 10% total body surface area (TBSA) burn requiring split skin grafting (SSG) were included
≥10% TBSA chosen as we identified a greater complexity of analgesic regime was required above this TBSA
Data collection: In 2 groups;24hrs pre SSG to 24hrs post SSG and included size of burn, pain scores, opioid, Ketamine and Lignocaine infusions and oral antineuropathic use
Primary outcomes: Change in pain score and OME post SSG
Hypothesis: Intravenous Lignocaine infusion will reduce pain score post SSG

Oral Morphine Equivalents (OME)comparison pre to post SSG Non opioid analgesia



	All Patients	Lignocaine	No Lignocaine	Ketamine	No Ketamine	Oral Anti neuropathic	No Oral Anti neuropathic
Pre SSG	167.3	239.1	155.1	277	82.6	185	115.8
Post SSG	219.6	308.9	204.6	322	121.8	226	181.8

Pain score difference pre to post SSG Non opioid analgesia



	All Patients	Lignocaine	No Lignocaine	Ketamine	No Ketamine	Oral Anti neuropathic	No Oral Anti neuropathic
Difference	1.5	0.65	1.69	1.5	1.7	1.4	1.1

Results

Study population: 1174 patients were admitted during this period (316 patients with ≥10% TBSA)
138 patients met eligibility criterion. Missing data points were excluded leaving 114 patients with full data sets for analysis
20 Patients received Lignocaine at time of SSG, of these 17 patients had full data sets for analysis
The Lignocaine group had larger median TBSA burn **30%** vs. 22% and more surgical encounters **5.45** vs. 4.22. Pre SSG pain scores were comparatively higher in the Lignocaine group **4.83** Vs 2.88
Primary outcomes:
Change in OME: A significant difference between pre and post SSG OME was found in both the Lignocaine and non Lignocaine groups
Change in pain score: The difference between pre and post op pain scores was compared; The non-Lignocaine group showed a significant post-operative increase (1.68, SE=0.32, p<0.001). **The difference was non significant for the Lignocaine group (0.18, SE=0.79, p=0.822)**

Conclusion

- The results suggest the Lignocaine group had a higher level of pre SSG pain yet had comparatively lower increases in their post SSG pain. This supports the hypothesis that there is a trend towards improvement in pain management in the Lignocaine group
- **Intravenous Lignocaine infusions used peri-operatively for major SSG surgery may reduce burns-associated pain**
- We propose a prospective randomised placebo-controlled trial to assess the efficacy of intravenous Lignocaine infusion on burns associated pain specifically donor site-related pain

References 1. Richardson P, Mustard L The management of pain in the burns unit Burns 2009;35:921–936 **2**. Gray P. Pregabalin in severe burn injury pain: A double-blind, randomised placebo-controlled trial PAIN.2011;152:1279–1288 **3**. Yuksel Delice E, Ulus B. The donor site pain assessment of the patient who were reconstructed split thickness graft. Agri. 2015;27(4)205-9 **4.** Sinha S etal. Treating pain on skin graft donor sites: review and clinical recommendations. J Trauma Acute Care Surg;83(5):954-964 **5**. Searle RD, Simpson KH. Chronic post-surgical pain. Conti Education in Anaesthesia, Critical Care & Pain 2010;10(1):12-14 **6**. Browne AL etal Persistent Pain Outcomes and Patient Satisfaction With Pain Management After Burn Injury Clin J Pain 2011;27:136–145 **7**. Dauber A.Chronic Persistent Pain After Severe Burns: A Survey of 358 Burn Survivors. PAIN MEDICINE.2002;3(1):6-17

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