
28 **Risk Factors and Outcomes of Opioid Dependence After Burn Injury: A Single Center Study**

Elliot Walters, MD, Steven E. Wolf, MD, FACS
University of Texas Medical Branch, Dickinson, Texas; University of Texas Medical Branch at Galveston, Galveston, Texas

Introduction: Patients with severe burns often have a prolonged recovery course and frequently opioid pain medications. Several studies showed patients who receive frequent and high doses of opioid medications are at elevated risk of developing opioid dependence. Risk factors for opioid dependence have been established in several fields, including in trauma patients, however opioid dependence within the burn population has not been well studied. In this study we identify risk factors and outcomes for burned patients with opioid dependence.

Methods: We performed a review of a deidentified database that covers our institution comprising over 1.9 million patients. ICD-10 codes were used to identify those with burns. We identified 9150 patients who received treatment for a burn injury between January 1, 2010 and December 31, 2020. From this cohort 130 patients (1.4%) developed documented opioid dependence. Patients from each cohort were balanced by propensity score matching. The database was then examined to determine treatment type and concomitant diagnoses.

Results: Prior to matching we found a significant increase in mortality, chronic pain, non-opioid substance abuse, depression, and use of opioid and non-opioid medication ($p < 0.05$) for those with opioid dependence. After propensity score matching, we found no significant increase in mortality or depression ($p > 0.05$). Chronic pain and non-opioid substance abuse remained elevated (OR 2.7, CI 1.6, 4.4; OR 2.4, CI 1.3, 4.5, $p < 0.05$, respectively). Those who developed opioid dependence were more likely to receive opioid and non-opioid pain medication ($p < 0.05$), but these were not more likely to receive IV opioid pain medication ($p > 0.05$). However, they were more likely to receive IV opioid pain medication more frequently ($p < 0.05$). Interestingly, patients who developed opioid dependence were more likely to follow up post-operatively and to receive anti-depressant and anti-epileptic (gabapentin and pregabalin) medications ($p < 0.05$).

Conclusions: Here we presented data on patients who developed opioid dependence following burn injury. These patients appear to receive more pain medication and receive it more frequently. We did not find a correlation of opioid dependence to depression or patient compliance. Characterizing the patient who develops opioid dependence will better help clinicians to identify patients at risk and direct their care accordingly. Further investigation is indicated to determine the impact these factors have and how these might be mitigated.

29 **Efficacy of a Novel LAM Femoral Cutaneous Block Technique for Acute Donor Site Pain**

David M. Hill, Pharm.D., BCPS, BCCCP, FCCM, Sai R. Velamuri, MD, FACS, Jay P. Desai, MD, Austin Ly, MD student, Eric Ly, MD student, Jerry Jones, MD

Firefighters' Burn Center, Memphis, Tennessee; Firefighter's Burn Center, Memphis, Tennessee; St. Louis University Health, St. Louis, Missouri; University of Tennessee Health Science Center, Memphis, Tennessee; University of Tennessee Health Science Center, Memphis, Tennessee; University of Tennessee Health Science Center, Memphis, Tennessee

Introduction: Patients with severe burn injuries often require split thickness skin grafting to expedite wound healing with the thigh being a common donor site. Uncontrolled pain is associated with increased opioid consumption, longer lengths of stay, and delay in functional recovery. Regional nerve blocks are increasing in popularity although supportive literature is limited, and techniques vary. Recently, we presented a case demonstrating a novel LAM (lateral, anterior, medial) femoral cutaneous block technique. The purpose of the case series is to assess the safety, feasibility, and clinical efficacy in a larger cohort.

Methods: The study was a dual IRB approved, observational case series from a single verified burn center. The electronic health record was retrospectively reviewed for patients admitted between June 2018 to June 2020 who had the LAM block placed for donor site pain by the acute pain service (APS) team. Patient demographics, and data pertinent to the LAM regional anesthesia block were collected (eg opioid usage before and after the block, pain, and physical therapy outcomes). The data were tabulated and analyzed using Microsoft Excel© and SPSS version 27.0. Descriptive statistics were utilized to describe the patient demographics and LAM block feasibility & safety. Morphine Milligram Equivalent (MME) were statistically compared utilizing repeated measures ANOVA on ranks and graphically presented.

Results: Twenty-four patients had total of 27 blocks placed, where 3 patients received the LAM block on two separate occasions. One patient had bilateral LAM blocks placed and was included as the single instance for the analysis. The majority were Caucasian males, but mechanism of injury varied. Two-thirds had a neurologic or psychiatric history. Seventy-one percent used tobacco and a quarter had a history of polysubstance abuse. Median area of the donor site was 360 cm² (207, 1140). Median day from admission to LAM was 8 (3, 12) with a median duration of 4 (3, 5) days. Median day until first ambulation after LAM was 3 (1,3). Eighty percent reported a decreased temperature sensation at the donor site. Pain was adequately controlled, and there were no adverse events or quadriceps weakness noted. There was a significant reduction in MME after block placement (Figure 1).

Conclusions: Regional nerve blocks offer an advantageous means of analgesia, while reducing potential adverse events associated with opioids. While the novel LAM technique reduced some sensation, early ambulation was not inhibited and patients able to participate with rehabilitation therapy.