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732 **Examining Staff Views and Perceptions After Implementation of a Laser Doppler Imaging Device Into Practice**

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**Introduction:** Laser doppler imaging (LDI) has been established as an accurate diagnostic tool to assess burn depth and measure healing potential. Despite this, its use in burn centers remain limited. While studies have examined challenges to LDI use, there is a paucity of literature factoring staff views and attitudes as a barrier to implementation into burn practice. The aim of this work was to assess and examine attitudes and perspectives following implementation of an LDI protocol into acute burn injury assessment.

**Methods:** Following institutional approval, a 22-question survey was disseminated among staff involved with implementation of an LDI device as a point of care tool to assess acute burn injury at a single ABA verified burn center. The survey focused on questions examining device ease of use, understanding of the underlying LDI technology, interpretation of imaging generation from wounds, and perceptions of patients' experience. Questions were answered on a standard 5-point Likert scale. All survey data was collected anonymously into an electronic database for assessment.

**Results:** Overall, there were 15 respondents to the survey questions. Five respondents found the LDI device difficult to use (33%). Barriers to device ease of use included difficulty with device movement (60%), incorporation of scanning into wound care and dressing placement (60%), and management of hardware or software issues that arise during use (60%). Challenges noted by respondents external to device use was mainly high patient census (80%). Despite this, 60% of respondents found the device easier to use after performing several scans in one or more patients and 60% found that scans generated matched their assessment of burn depth. Among respondents, 66% found patients amenable to the scanning process and 80% did not feel that that the scanning process worsened patients' pain.

**Conclusions:** Challenges in LDI device use, implementation with wound care and dressing placement, and high patient census were identified as barriers to LDI use. Despite this, ease of device use improved with more frequent use. Identification of views and perceptions such as these can lead to protocol changes and additional training that facilitate ease of LDI use. Further examination will be required to better elucidate this information.

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733 **Massive Burn Injuries: Characteristics, Treatment Strategies and Outcomes from a Single Institution**

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**Introduction:** Advances in burn care have led to improved survival, with survival after a 50% total body surface area (TBSA) or larger burn being more common. Traditionally, age, TBSA burned, inhalation injury, delayed resuscitation and evidence of early organ dysfunction have been predictive of survival. The goal of this study was to describe a large series of massive burn injuries, treatment strategies and identify factors related to survival.

**Methods:** Following IRB approval, a retrospective review of adult patients who sustained 50% TBSA or larger burn from 8/2009 to 7/2019 at an ABA verified burn center was conducted. Demographic, burn size/depth, mechanisms of injury, treatments, and outcome data were collected. Univariate and multivariate analyses were performed using R statistical software (R-project.org).

**Results:** 155 patients were included which was 4.7% (155/3312) of all burn admissions during that time interval. Patients had an average age of 44±18 years, a male predominance (79%), and average TBSA burned of 70±15%. Overall mortality was 54% (83/155). One third of patients were transitioned to comfort care. The 103 treated patients were younger (37±12 vs 59±19 years; p< 0.0001), more likely to be male (85 vs 65%; p=0.006), had smaller average TBSA (66±13 vs 78±16%; p< 0.0001) and more likely to have a psychiatric condition (31 vs 13%; p=0.02). Approximately 70% of treated patients survived to discharge. Survivors were more likely to have smaller TBSA (63±13 vs 73±13; p=0.001) and less third-degree burns (49±24 vs 61±24; p=0.01). One third of treated patients developed renal failure. One quarter of patients had a mental health condition, and these patients spent more time in the hospital (61 vs 31 days; p=0.009), more time on ventilator (29 vs 12 days; p=0.046), required more surgery (3 vs 2; p=0.048), and were less likely to die (36% vs 59%; p=0.02). On multivariate regression analysis of treated patients, psychiatric illness (OR 0.19; p=0.03) and burns related marijuana/hash oil production (OR 0.13; p=0.015) were protective against mortality.

**Conclusions:** Surviving burns >50% TBSA is becoming more common as burn care continues to improve. Mortality in this study is lower than what would be predicted by an established revised Baux score regression model (predicted 61% overall mortality and 48% for treated). Care for these massive burn injuries is complex and requires an experienced multidisciplinary team. There is an established link between burn injuries and mental health conditions. Despite similar burn size/depth, patients with a mental health history spent significantly more time in the hospital, more time on the ventilator and required more surgery.