Heidi C. Brewster L2 LSU Health Sciences Center, New Orleans, LA

Dr. Victoria Miles

UMCNO Burn Center

"A Retrospective Single Center Study Examining Burn Severity, Gastrointestinal Prophylaxis and Gastrointestinal Complications in Burn Patients"

Introduction: Severe burn injury can cause a serious hypermetabolic and inflammatory state that contributes to gastrointestinal (GI) dysfunction despite current best practices intended to minimize negative outcomes. Burn severity, as measured by total body surface area (TBSA), and the presence of concomitant traumatic injuries may contribute to the development of GI complications following burn injury. GI prophylaxis, including drugs such as proton pump inhibitors (PPIs) H2-receptor blockers, or antacids, is commonly utilized to decrease the risk of GI complications, though prophylactic practices may vary according to injury severity. This study evaluates the relationships between burn TBSA and severity, GI prophylaxis, and GI complications, including dysmotility, ulcers, bowel obstruction, abdominal compartment syndrome, bowel ischemia, and others.

Methods: A single-center retrospective chart review was conducted of adult burn patients admitted between January 1, 2016, and December 31, 2024, with burns involving ≥15% total body surface area (TBSA) or ≤15% TBSA with inhalation injury. Patient demographics, injury characteristics, treatments, and outcome data were collected from electronic medical records and the center's burn registry. Variables of interest include burn TBSA and degree, grade of inhalation injury if present, type of GI prophylaxis, GI complications, mortality, length of hospital stay, and discharge disposition. PPI and H2-receptor blocker utilization will also be compared according to TBSA. Multivariate regression analysis will be used to identify factors independently associated with GI complications and clinical outcomes.

Results: Data collection and statistical analysis are ongoing. The incidence and type of GI complications will be compared according to burn TBSA and severity. Patterns of GI prophylaxis, including the proportion of patients receiving PPIs versus H2-receptor blockers, will be described and compared according to burn severity. Associations between these factors and clinical outcomes will also be evaluated.

Conclusions: This study aims to evaluate the relationship between burn severity and the development of GI complications following burn injury. Additionally, patterns of GI prophylaxis will be evaluated to determine whether prophylactic management differs according to burn severity, and if certain prophylactic practices yield more favorable outcomes in GI function post-burn injury.

Applicability of Research to Practice: Identifying factors associated with GI complications may help characterize patients at increased risk of GI dysfunction and inform future strategies for GI management following burn injury. The study may also characterize patterns of GI prophylaxis

most associated with improved gastrointestinal outcomes in varying severities of burn injury, providing guidance and evidence that supports a more unified approach to GI prophylaxis.

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