80 Validation of PROMIS-25 Among Children Living with Burn Injuries

Kara McMullen, MPH, Alyssa M. Bamer, MPH, Andrew Humbert, PhD, Colleen M. Ryan, MD, Jeffrey C. Schneider, MD, Lewis E. Kazis, ScD, Barclay T. Stewart, MD, PhD, Oscar E. Suman-Vejas, PhD, MS, Dagmar Amtmann, PhD

University of Washington, Portland, Oregon; University of Washington, Golden, Colorado; University of Washington, Seattle, Washington; Harvard Medical School, Boston, Massachusetts; , Massachusetts; Boston University School of Public Health, Spaulding Rehabilitation Hospital, Harvard Medical School, Boston, Massachusetts; University of Washington, Seattle, Washington; U of Texas Medical Branch, Galveston, Texas; University of Washington, Seattle, Washington

Introduction: Patient-reported outcomes are important for burn injury research and clinical practice. The NIHfunded Patient Reported Outcomes Measurement System (PROMIS)-25 profile has been validated for use in diverse populations of children with many conditions, though not among children living with burn injuries. The purpose of this study was to examine the reliability and validity of PROMIS-25 scores in children living with burn injury.

Methods: Data were provided by children who were participating in a multi-center longitudinal study of outcomes after burn injury. The PROMIS-25 Profile, which includes 4 items for each domain of physical function mobility, anxiety, depression, fatigue, peer relationships, and pain interference, was evaluated for reliability and validity. Floor and ceiling effects, unidimensionality, internal consistency, and reliability were examined. Correlations with other measures (Post-Traumatic Growth Inventory-Child (PTGI-C), Child PTSD Symptom Scale (CPSS) and Burn Outcome Questionnaire Body Image Scale (BOQBI)) were calculated to assess concurrent validity.

Results: 256 children living with burn injury who sustained a moderate to severe injury provided responses on PROMIS-25 domains 6 months-10 years post burn. Participants' age ranged from 8-18 years at time of assessment; mean years since injury was 4.3 (SD 4.1). All PROMIS-25 domains showed high internal consistency (Cronbach's α =0.90–0.95). Substantial portions of the sample reported no symptoms (anxiety [58.2%], depressive symptoms [54.6%], fatigue [50.8%], pain [60.1%]). There was a large ceiling effect on peer relationships (46.8%) and physical function mobility (57.5%). One-factor confirmatory factor analyses supported unidimensionality for all domains (all CFI >0.98). Reliability was credible for group mean comparisons (>0.8) across at least some trait levels for all domains except fatigue and anxiety which had low reliability (< 0.8) across the entire trait range. The magnitude and direction of correlations were as anticipated (0.32 for peer relationships and body image; 0.51 for depressive symptoms and PTSD) with the exception of weak negative correlations between PTGI-C and the anxiety and depression domains.

Conclusions: The results provide some evidence of reliability and validity of PROMIS-25 scores among children living with burn injury. Reliability of all domains was low to moderate and would likely be improved, and ceiling effects reduced, by administering the PROMIS-37, which includes 6 items per domain.

Correlative XI: Surgical Care, Acute Nonreconstructive

C-255

81 Post-operative Self-adherent Compression Wrapping of the Hand and Its Impact on Skin-graft Viability

Scott F. Vocke, DPT, Joseph S. Puthumana, MD, Brooke Dean, PT, DPT, Gregory Andre, MSOT, Joshua Rodriguez, MS OTR/L, Misao Mercadante, Burn Rehab Tech, Charles S. Hultman, MD, MBA, Scott Lifchez, M.D., Qingwen Kawaji, MD, ScM, Sohayla Rostami, DO, Stephanie L. Martinez, MD, Julie Caffrey, DO, FACOS

Johns Hopkins, Baltimore, Maryland; Johns Hopkins University Department of Plastic and Reconstructive Surgery, Baltimore, Maryland; Johns Hopkins Bayview Medical Center, Baltimore, Maryland; Johns Hopkins Bayview Medical Center, Lutherville Timonium, Maryland; Johns Hopkins Bayview, Timonium, Maryland; Johns Hopkins Bayview, Baltimore, Maryland; Johns Hopkins University School of Medicine, Baltimore, Maryland; Johns Hopkins, Baltimore, Maryland; Johns Hopkins, Baltimore, Maryland; Johns Hopkins, University, Baltimore, Maryland; Johns Hopkins, Towson, Maryland; Johns Hopkins, Baltimore, Maryland

Introduction: Potential complications of autografting for burn wound coverage of the hand include edema, hematoma formation, and bleeding; all of which can lead to graft failure. Self-adherent elastic wraps are commonly used by burn rehabilitation clinicians to minimize complications by providing graft protection and decreasing edema postoperatively; however, there is a lack of evidence on its impact on graft healing. The purpose of this study was to determine if the application of self-adherent elastic wraps to the hand in the operating room after autografting improves the percentage of graft viability.

Methods: A retrospective chart review was performed for 37 patients with burned hands who underwent autografting from January 2017 to July 2021. Grafted hands were categorized into 2 groups: post-operative dressings with and without self-adherent elastic wraps. Post-operative day 4 pictures for both groups were collected from the medical record and a blinded digital photograph analysis of graft viability was performed by 5 expert raters including 3 Burn Surgery Fellows,1 Burn Attending Surgeon and 1 Hand Attending Surgeon. A rating system was developed based on percentage of graft take as seen in Table 1 and presence of hematomas were assessed.

Results: Patients who received self-adherent elastic wraps suffered burns with significantly larger TBSA (p=0.007) and were admitted for a longer duration (p=0.009) than patients who did not. Patients with elastic wrap had a higher percentage of grafts with >95% take (64.0% vs 41.7%, p=0.227) and a lower rate of hematoma formation (24.0% vs. 41.7%, p=0.443). Intra-class correlation coefficient across raters was 0.90 for graft take and 0.87 for determining presence of hematomas, indicating excellent interrater reliability.

Conclusions: Despite suffering larger burns requiring longer hospitalizations, patients who received elastic wrap had a higher rate of >95% graft take than those without. This

study is limited by a relatively small sample size, however these findings warrant continued research in the use of selfadherent elastic wrap to maximize graft take in hand burns. Figure 1. Self-adherent elastic wrapping of the hand



82 Early Skin Excision Decreased the Risk of Skin Infection, Sepsis and Mortality Among Burn Patients

Giovanna De La Tejera, BSA, Juquan Song, MD, Kassandra K. Corona, BS, Sunny Gotewal, BS, Kendall Wermine, BS, Tsola A. Efejuku, BSA, Phillip H. Keys, BS, Alejandro A. Joglar, BS, Elvia L. Villarreal, BS, Lyndon G. Huang, BA, Shivan N. Chokshi, BBA, Jasmine M. Chaij, BS, BA, Shelby P. Bagby, BA, Maria Haseem, BA, George Golovko, PhD, Amina El Ayadi, PhD, Steven E. Wolf, MD, FACS

University of Texas Medical Branch, Galveston, Texas; University of Texas Medical Branch at Galveston, Galveston, Texas; University of Texas Medical Branch, Galveston, Texas; University of Texas Medical Branch, Galveston, Texas; University of Texas Medical Branch, Galveston, Texas; University of Texas Medical Branch at Galveston, Galveston, Texas; University of Texas Medical Branch at Galveston, Galveston, Texas; University of Texas Medical Branch at Galveston, Galveston, Texas

Introduction: In lieu of outdated and limited patient studies on excision for severe burns, a more comprehensive analysis is indicated to determine the effects of early skin excision following burn. This study aims to address the outcomes of early excision.

Methods: Data collection and analysis was performed using TriNetX, a national research database. The study population included patients ranging from 0 to 90 years old who underwent excision for burns. Groups were stratified by the number of days after injury in which they received a skin excision treatment. Five outcomes were analyzed: death, cardiac stress, wound infection, blood transfusion, and sepsis. Risk and incidence of various health outcomes were compared between groups after matching for age, gender and race, using a z-test with p< 0.05 considered significant.

Results: We identified 2,522 patients who underwent excision between 0-3 days, 825 between 4-7 days, and 419 between 8-14 days following burn. We found a significant decrease in risk of skin infection and sepsis for skin excision 0-3 days after burn compared to 4-7 days (p< 0.05). Additionally, the frequency of blood transfusion significantly increased for those with excision 0-3 days after burn when compared to 4-7 days (p< 0.05). There was a significant increase in the risk of mortality for patients who received skin excision 8-14 days after injury as compared to both 0-3 days (p< 0.05) and 4-7 days (p< 0.05). However, we found no statistical difference in cardiac stress, skin infection, blood transfusion or sepsis between 0-3 and 8-14 days nor 4-7 and 8-14 days.