Management of Pediatric Burn Patients in the Emergency Department: A Retrospective Study of One Institution

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Introduction
• Burn injuries represent a significant burden to society
• 19% of burn injuries are children and adolescents
• Common mechanisms of burn are scald, thermal and electrical injuries
• There are no recommendations or standards on how to best manage pain in this patient population
• Goal: Identify the demographic of patients managed as outpatient by the emergency department (ED) and the modalities most often used in the management of pediatric burn pain

Methods
• Patients were identified through a database maintained by the pediatric burn service
• Included patients under the age of 18 years treated in 2014 for acute burn injury in the pediatric ED of The Johns Hopkins Charlotte R. Bloomberg Children’s Center
• We collected data related to demographics, burn characteristics, pain and analgesic regimens
• The data were extracted in a systematic manner using REDCap (Research Electronic Data Capture)

Results
• The patients (M:F 76:78) mean age was 6.29 ± 4.9 years and weight was 28.2 ± 24.6 K
• 67.5% were African American, and 24% were Caucasian, 3.9% were Asian, 0.6% American Indian and 5.8% were unknown
• Burn etiology: 51.3% of burns were from hot liquid/steam, 30.5% from hot object, 7.8% from fire, 2.6% from chemicals and 2.5% from other cause
• Pain management methods: 39.1% intranasal fentanyl, 10.6% IV morphine, 10.6% oral acetaminophen, 8.6% IV ketamine and 7.3% oral oxycodone
• Initial pain scores were from zero to three (58.1%) and four to ten (41.9%) on arrival and zero to three (70.2%) and four to ten (29.8%) at discharge
• Debridement was performed in 61.8% of patients

Discussion
• Management of pain in pediatric burn patients varies widely
• Our analysis revealed a disparity in the analgesic regimens used
• Goals for future studies would include finding a difference in pain scores associated with different regimens to provide recommendations for protocol development
• A significant number of patients required debridement and these patients may have benefitted from a more standardized analgesic regimen
• Some patients still had pain scores greater than four (moderate pain) at discharge and therefore would have benefited from better pain control

References