

National Trends of Pediatric Aspirated/Ingested Foreign Bodies in Emergency Departments

Introduction: The primary objective of this study was to elucidate recent national emergency room trends in pediatric aspirated/ingested foreign bodies (FB) as well as identify risk factors for direct hospital admission or mortality.

Methods: A cross-sectional study was conducted using the National Electronic Injury Surveillance System (NEISS) database between 2010-2020. Patients less than 18 years old with a diagnosis of aspirated or ingested FB (n=37,451) presenting to emergency departments nationwide were identified. Incidence rates per 100,000 people-year (IR) were calculated using provided national estimates (NE) as well as U.S. Census Bureau estimates of population. Multivariate logistic regression analysis was done to identify risk factors for direct hospital admission or mortality.

Results: Patients presenting in emergency rooms between 2010-2020 with aspirated FB (NE=109,847) or ingested FB (NE=810,311) were isolated. The overall IR for pediatric aspirated FB was 3.1 (2.9-3.3) and ingested FB was 23.0 (22.3-23.8) per 100,000 people-year. There has been a significantly decreasing trend of aspirated (-8.2%; p=0.013) and ingested FB (-22.8%; p=0.066) within the study period. Magnets have been increasing for aspirated (1.4%; p=0.037) and ingested FB (9.4%; p=0.004).

Within pediatric aspirated FB, African American (AA) compared to White patients had decreased odds of same hospital admission (OR 0.8), but increased odds of transfer admission (OR 1.6) and mortality (OR 9.7) (all, p<0.001). Besides AA, other risk factors for mortality in aspirated FB were male (OR 24.1) and hardware aspiration (OR 36.0) (all, p<0.001). No mortality was recorded for pediatric ingested FB between 2010–2020.

Conclusion: There is a significantly decreasing trend of aspirated FB between 2010-2020. There may exist a disparity of care for pediatric AA with aspirated FB associated with decreased odds of same hospital admission, and increased odds of transfer admission and mortality.