28 - Title: Transitional Cell Carcinoma of the Bladder in Pediatric Patients: A Comparison with Adults within the National Cancer Database

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***Background*:**

Transitional cell carcinoma of the bladder (TCCB) is a well-documented malignancy in adults but is rarely observed in the pediatric population. Given its rarity in children, we sought to leverage a large national database to analyze demographics, tumor characteristics, staging, and outcomes in pediatric patients compared to young adults (YA) and older adults (OA).

***Methods/Research Design*.**

A retrospective cohort study was conducted using the National Cancer Database (NCDB) to identify patients diagnosed with TCCB, as defined by ICD-O-3 histology codes 8120–8131. Patients were stratified into three age groups: Pediatric (PEDS) (≤ 21 years), Young Adult (YA) (22–50 years), and Older Adult (OA) (>50 years). Cases with missing survival data were excluded. Demographic variables, tumor characteristics, treatment modalities, and overall survival outcomes were analyzed using chi-square tests, Kaplan-Meier survival analysis, and Cox regression models.

***Results*:**

A total of 331 (0.05%) PEDS, 32,184 (4.40%) YA, and 699,607 (95.56%) OA cases were identified. In the pediatric cohort, TCCB was more prevalent in males (64%) and predominantly observed in non-Hispanic white individuals. Among pediatric cases, 286 (86.4%) had TCC in situ (TCCIS), a form known to be more aggressive and challenging to treat in children. Surgery was the primary treatment modality for 319 of 331 (96.4%) pediatric patients. Additionally, 50 (15.1%) received intraoperative or adjuvant chemotherapy, compared to 27.3% in YA and 28.8% in OA. Pediatric patients demonstrated superior survival outcomes at 1, 2, 5, and 10 years compared to YA and OA. Across all age groups, invasive malignancies were associated with poorer prognoses than in situ disease.

***Conclusion*:**

This study represents the largest analysis of pediatric TCCB to date, highlighting a higher prevalence of aggressive histology (TCCIS) in children. Despite this, pediatric patients exhibited improved survival rates compared to YA and OA. Surgery remains the primary treatment across all age groups, though pediatric patients were less likely to receive intraoperative or adjuvant chemotherapy. These findings underscore the need for further investigation into optimal treatment strategies for pediatric TCCB.