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Bladder Cancer in Young Women: Clinicopathological Features and Risk Factors from a Multi-Center Retrospective Study

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Abstract

Background:
Bladder cancer is rare in women under 45 years of age, and its clinical behavior in this population is not well defined. Compared to men, women often present at older ages and with more advanced disease. This study aimed to evaluate the clinicopathological features, risk factors, and outcomes of bladder tumors in Iranian women under 45.

Methods:
We conducted a multicenter retrospective study of women under 45 who underwent transurethral resection of bladder tumors (TURBT) between 2017 and 2022 at three academic hospitals. Demographic, clinical, and pathological data were collected from medical records and patient interviews. Mean follow-up was 4.1 ± 2.1 years.

Results:
Forty-six patients were included. Most (76.1%) presented with urinary symptoms, while 23.9% were diagnosed incidentally. No identifiable risk factors were found in 65.2% of patients; smoking (13%) and occupational exposures (21.7%) were less common than expected. Most tumors were low-grade (65.2%) and early-stage (Ta or T1 in 73.8%). Intravesical BCG therapy was administered in 23.9%. Cystectomy and mortality rates were each 10.8%. Tumor recurrence occurred in 23.9% of patients and was significantly associated with high-grade pathology (43.8% vs. 13.3%; P=0.032), but not with age or stage.

Conclusion:
Bladder cancer in young women often presents at early stages and in the absence of traditional risk factors, highlighting the importance of maintaining clinical vigilance even in low-risk populations. Tumor grade remains the strongest predictor of recurrence and may guide individualized surveillance strategies. Further prospective studies are warranted to explore novel environmental risk factors and optimize long-term management. Findings should be interpreted in light of the study's retrospective design and modest sample size.