TERT promoter mutation in non-malignant urothelium of bladder is associated with recurrence in patients with non-muscle invasive bladder carcinoma.

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Background

✓ **TERT** promoter mutations contribute to tumorigenesis by promoting immortalization and genomic instability.

✓ **TERT** promoter mutations are detected in urine from patients with no evidence of cancer, and is associated with developing urothelial carcinoma consequently.

✓ We hypothesized that mutated **TERT** promoter DNA might be released from non-malignant urothelium.

Materials and Methods

✓ We extracted DNA from biopsy samples and tumor from patients with non-muscle invasive bladder tumor, and performed droplet digital PCR analysis of **TERT** promoter.
Summary of results

✓ TERT C228T mutation was detected in 9% of non-malignant urothelium.

✓ TERT C228T mutation was detected in 30% of patients with NMIBC

✓ TERT C228T mutation in non-malignant urothelium was significantly associated with bladder recurrence after TURBT (p=0.005).

Conclusions

The TERT C228T mutation analysis of systemic random biopsy specimens may lead to novel treatment strategy for patients with NMIBC.