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Assessing Prognostic Changes Through Hematuria Work-up After Diagnosis

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Objectives : Hematuria is a common clinical finding with potential implications for severe health outcomes, including end-stage renal disease (ESRD), bladder cancer, and mortality. However, the prognostic significance of hematuria in the general population remains unclear.
Methods : This retrospective cohort study utilized data from the National Health Insurance Sharing Service (NHISS) database, encompassing the entire Korean adult population with hematuria from 2009 to 2021. A total of 157,718 patients were included in the analysis. Risk stratification was based on smoking history exceeding 10 pack-years, age over 50 years, prior malignancy, and concurrent proteinuria. Patients were categorized as high-risk (≥1 risk factor) or low-risk. Each group was further divided based on clinical management: (1) repeated urine analysis, (2) no follow-up urine analysis, and (3) invasive workup, including urine analysis, cystoscopy or CT within three months. Adjusted hazard ratios (HRs) for ESRD, bladder cancer, and mortality were calculated using propensity score-matched Cox proportional hazards models and Kaplan–Meier survival analyses.
Results : In the low-risk group, patients who underwent repeated urine analysis or invasive workup showed significantly poorer prognosis compared to those who did not undergo follow-up or invasive procedures. This finding may reflect a clinician's judgment factor, where additional evaluations are performed when the clinician suspects a more severe underlying condition despite low-risk classification. In the high-risk group, patients who underwent early and vigorous workup within three months also demonstrated worse outcomes, suggesting that heightened clinical concern and perceived risk may influence the decision to pursue invasive diagnostics.
Conclusions : These findings highlight the need to consider clinician judgment when interpreting outcomes in hematuria patients, as aggressive diagnostic approaches may reflect underlying severity not captured by risk factors alone.