

Moreover, residual cancer cells may require many years to become clinically apparent, since the average annual growth rate of radiographically visible masses can be as small as 0.13 cm/year (3) with rare but real potential to metastases, leaving concerning to longer follow-up.

While the benefits of nephron sparing surgery in terms of preventing chronic kidney disease and its associated cardiovascular morbidity and potential mortality are progressively clear (4,5), selection bias, variations in technique, tumor size and location make adequate evaluation of the enucleation and its comparison to standard partial nephrectomy difficult.

Additionally, it is well recognized the phenomenon that despite increased detection and treatment of small tumors, mortality from RCC did not decrease (6), suggesting a lead time bias which uniquely joins kidney and prostate cancer; most patients will very likely die with their cancer rather than of their cancer.

Further prospective, randomized and unbiased studies with technique standardization are necessary and advance in the identification of clinically significant tumors will be important in determining the renal masses needing treatment, as well as the well-adjusted treatment in each case. To the future, the answer needed is probably: when is enucleation necessary and safe?

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### Association of hematuria on microscopic urinalysis and risk of urinary tract cancer

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**Purpose:** We determined the incidence of urinary tract cancer in patients with hematuria, stratified risk by age, gender and hematuria degree, and examined current best policy recommendations.

**Materials and Methods:** We performed a large, retrospective population based cohort study of patients who underwent microscopic urinalysis during 2004 and 2005 in a large managed care organization. Patients were followed for 3 years for urinary tract cancer.

**Results:** We identified 772,002 patients who underwent urinalysis during the study period. After exclusions due to previous hematuria, age less than 18 years, pregnancy, urinary tract infection, inpatient status and prior urinary tract cancer 309,402 patients were available for analysis, of whom 156,691 had hematuria. The overall 3-year incidence of urinary tract cancer in those with hematuria was 0.68%. Older age (greater than 40 years OR 17.0, 95% CI 11.2-25.7), greater hematuria (greater than 25 red blood cells per high power field OR 4.0, 95% CI 3.5-4.5) and male gender (OR 4.8, 95% CI 4.2-5.6) were associated with a higher risk of cancer. The American Urological Association definition of microhematuria had 50% sensitivity, 84% specificity and 1.3% positive predictive value.

**Conclusions:** The incidence of urinary tract cancer is low even in individuals with microhematuria. Thus, current best policy recommendations do not perform well. Since older age, male gender and greater hematuria are associated with a higher risk of cancer, future studies should evaluate strategies that target these populations.

### Editorial Comment

Although under review, the last AUA Best Practice Policy Recommendations suggest evaluation in patients who have at least 2 urinalyses with 3 or more RBC/HPF within a 12-month period as well as those with gross hematuria (1).

The authors have proposed an approach of evaluating patients older than 40 years with at least 1 urinalysis showing greater than 25 RBC/HPF. Compared to the AUA method this alternative strategy could have spared 25,917 evaluations and detected 6 more cases of urinary tract cancer. Compared to the CUA approach (AUA restricted to patients > 40 years) it could have spared 11,584 evaluations and detected 16 more cases.

Older age, greater hematuria and male gender were predictors of urinary tract cancer, in accordance to a more restrictive protocol based on home dipstick testing to identify hematuria in a limited age spectrum (> 50 years), including only men with a proved beneficial impact on positive cases of bladder cancer (2).

However, future studies are to be greatly improved including evaluation of known risk factors, such as smoking history, occupational exposure to chemicals or dyes, gross hematuria, urological disease, irritative voiding symptoms, urinary tract infection, analgesic abuse and pelvic radiation in prospective, randomized trials of general population.

Furthermore, confounding clinical contexts, such as menstruation, vigorous exercise and cases of recent urinary tract instrumentation should be excluded and also the complete evaluation of urine cytology, upper tract imaging and cystoscopy are necessary for all patients to provide the best evidence for a safe actualization of the last recommendations that age 10 years.

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