

How seriously should we take haematuria?

J Lazarus

Division of Urology, Groote Schuur Hospital, University of Cape Town, South Africa

Corresponding author, email: j.lazarus@uct.ac.za

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Please forgive the folly of the question in the title. It is a question I have been puzzling over during some recent work at Nottingham University Hospital in the UK. The hospital seems overwhelmed by often asymptomatic members of the public who have dipstick-positive haematuria. Whether they be 19 or 99 years, they all get a scope and a scan.

I take significantly longer to consent to the flexible scope than actually doing it. For many patients, there is significant anxiety attached. The relief when nothing sinister is found and the disbelief how benign the procedure was is palpable as they leave.

My concern is that of the seemingly 100s of flexi-scopes I've performed, the pickup of a bladder cancer can be counted on less than one hand. The NHS in the UK has a significant burden placed on them to maintain these office urology services.

The economic impact of haematuria workup is significant. A recent cost analysis revealed that cystoscopy combined with renal ultrasound used to investigate non-visible haematuria produced a cost per cancer detected of US\$ 53 810.¹

A recent metanalysis in *European Urology* helps quantify the anticipated pickup rates. It found a bladder cancer incidence rate from 44 studies and 229 701 patients of 17% for visible haematuria (VH) and 3.3% for non-visible haematuria (NVH).²

It is worth noting that some studies have found a far lower pickup rate. A UK group evaluating over 3 500 patients, reported 3.5% of patients presenting with VH and 1% of patients with NVH have a diagnosis of malignancy.³

The UK's National Institute of Health and Care Excellence (NICE) publish guidelines which govern the GP referral of suspected urological cancers.⁴ NICE have established the '2-week rule' – a set of government guidelines for GP recognition and referral pathways via the NHS e-Referral Service. It mandates NHS trusts to see a patient with a suspected cancer within two weeks. Unquestionably, the two-week rule also provides patient reassurance that their evaluation will be fast-tracked.

From my usual practice in a state facility in South Africa, this degree of prompt referral is jaw dropping and much to be admired.

But it gets better. For patients with a cancer, 'First Definitive Treatment' from receipt of urgent GP referral must occur within 62 days. These two- and eight-week rules place a huge burden on NHS trusts to meet cancer waiting list targets.

Trusts that "breach" these wait times are sanctioned. Data on performance is meticulously kept and publicly available.⁵ Trusts will fund Saturday surgery lists to prevent a breach. I saw this first hand when I did a robotic fellowship at St George's University Hospital in London in 2016. I got no Saturday's off!

Asymptomatic 'dipstick-positive haematuria' is a common reason for urological referrals with prevalence rates that range from 13% to 20%.⁶ Given the low pick-up rate for NVH and the attendant economic burden, some authors have tried to risk-stratify patients.

Tan et al. have developed and validated a novel haematuria cancer risk calculator.⁷ Unsurprisingly, age > 65 years, VH, smoking and male gender were most predictive. They showed that adopting a risk score approach identified significantly more cancers (11.4%), which would have been missed if NICE guidance was applied. They also reduced the number of patients (149 of 3 539) subjected to investigations.

In support of a risk-stratified approach, another study ($n = 525$) found no urological cancers in patients ≤ 40 years and only two patients < 60 years.⁸

The plethora of urothelial cancer biomarkers and 'virtual cystoscopy' imaging continue to hold promise (as yet unfulfilled) to obviate the need for cystoscopy for diagnosis and surveillance.

However, in 2022 we must still conclude that there is no real alternative to cystoscopy.

Lastly, I'd like to highlight that at Groote Schuur Hospital, we have run a 'one-stop haematuria clinic' for close to two decades. An audit of 275 patients (over three and a half years) showed that one-fifth (55/275) of the patients were diagnosed with a urological malignancy, mainly bladder cancer (87.2%, $n = 48$).⁹ The 50–69-year age group was the most common window for diagnosis of a neoplasm. Forty-six patients (46/55) with urothelial cancers were diagnosed at a relatively early stage and were therefore offered curative management.

The audit revealed that the one-stop haematuria clinic can streamline diagnosis of urological malignancies in the South African setting. These findings support the setting up of such clinics in other hospitals to improve ease of early access to the urological service. From our data, pickup rates at such clinics are likely to be far higher than in the developed world.

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