Joint Consensus Statement on the Initial Assessment of Haematuria

Prepared on behalf of the Renal Association and British Association of Urological Surgeons.

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Initial assessment of haematuria

Introduction

The investigation and management of haematuria is confused by lack of clarity over definitions, diagnosis and specialist referral criteria. A major evidence review was undertaken and reported in 2006 (Health Technology Assessment: Diagnostic tests and algorithms used in the investigation of haematuria available at http://www.ncchta.org/execsumm/summ1018.htm). The review highlighted the lack of high quality studies and unanswered questions relevant to clinical care. As a consequence, the Renal Association (RA) and British Association of Urological Surgeons (BAUS) formed a joint working party to agree joint guidelines to help inform health care professionals and commissioners caring for patients presenting with haematuria. These guidelines are for the management of haematuria once detected. Urine testing for haematuria should only be performed for identifiable clinical reasons; there is currently no evidence to support opportunistic screening of the general population. The nephrological aspects of diagnosis and management are written to be consistent with forthcoming NICE chronic kidney disease (CKD) guidelines (due for publication September 2008), and supersede the current UK (Royal College of Physicians) CKD guidelines.

1. Terminology

It is important to use terms understandable to the general population as well as health care professionals. The following terms are recommended for general use:

Visible Haematuria (VH). Otherwise referred to as 'macroscopic haematuria' or 'gross haematuria'.
Urine is coloured pink or red (or, on occasion like cola in acute glomerulonephritis). Symptom reported by patient or as seen by health professional. Requires consideration of other (rare) causes of discoloured urine (myoglobinuria, haemoglobinuria, beeturia, drug discoloration – rifampicin, doxorubicin)

Non-Visible Haematuria (NVH). Otherwise referred to as 'microscopic haematuria' or 'dipstick positive haematuria'. This is further sub-divided as follows:

- **Symptomatic Non-Visible Haematuria (s-NVH)**. Symptoms such as voiding lower urinary tract symptoms (LUTS): hesitancy, frequency, urgency, dysuria.
- **Asymptomatic Non-Visible Haematuria (a-NVH)**. Incidental detection in the absence of LUTS or upper urinary tract symptoms.

2. Definition of positivity

Dipstick versus microscopy

- Urine dipstick of a fresh voided urine sample, containing no preservative, is considered a sensitive means of detecting the presence of haematuria.
- Community based urine samples sent for microscopy have a significant false negative rate; the procedure is more labour intensive, and adds little to establishing the diagnosis of haematuria. Routine microscopy for confirmation of dipstick haematuria is not necessary.

Trace versus 1+

- Whilst the sensitivity of urine dipsticks may vary from one manufacturer to another, significant haematuria is considered to be 1+ or greater. Trace haematuria should be considered negative.

Haemolysed versus non-haemolysed

- There is no distinction in significance between non-haemolysed and haemolysed dipstick-positive haematuria. 1+ positive for either should be considered of equal significance.

3. What is significant haematuria?

a) Any single episode of VH.

b) Any single episode of s-NVH (in absence of UTI or other transient causes).

c) Persistent a-NVH (in absence of UTI or other transient causes). Persistence is defined as 2 out of 3 dipsticks positive for NVH.

Transient causes that need to be excluded before establishing the presence of significant haematuria are:

- Urinary tract infection (UTI)
  Haematuria in association with UTI is not uncommon. Following treatment of UTI, a dipstick should be repeated to confirm the post-treatment absence of haematuria. It should be remembered that UTI (regardless of haematuria) can be the first presentation of significant genito-urinary pathology, and should be further investigated if clinically indicated.
  UTI is most readily excluded by a negative dipstick result for both leucocytes and nitrites. Otherwise an MSU negative for pyuria and culture are required.
- Exercise induced haematuria or rarely myoglobinuria (VH and NVH)
- Menstruation.

N.B. The presence of haematuria (VH or NVH) should not be attributed to anti-coagulant or anti-platelet therapy and patients should be evaluated regardless of these medications.

4. Initial investigations for a patient with s-NVH and persistent a-NVH.

- Exclude UTI and/or other transient cause.
- Plasma creatinine/eGFR.
- Measure proteinuria on a random sample. Send urine for protein:creatinine ratio (PCR) or albumin:creatinine ratio (ACR) on a random sample (according to local practice). N.B. 24 hour urine collections for protein are rarely required. An approximation to the 24 hour urine protein or albumin excretion (in mg) is obtained by multiplying the ratio (in mg/mmol) x10.
- Blood pressure

5. Urological referral

The following patients require direct referral to urology for further investigation.

- All patients with visible haematuria (any age).*
- All patients with s-NVH (any age).
- All patients with a-NVH aged ≥40 yrs.

* N.B. Some patients <40 yrs with cola-coloured urine and an inter-current (usually upper respiratory tract) infection will have an acute glomerulonephritis, and a nephrology referral may be considered more appropriate if clinically suspected.

6. Nephrological referral

For patients who have had a urological cause excluded, or have not met the referral criteria for a urological assessment (see point 5 above), a nephrology referral should be considered. The need for a nephrology referral in this situation depends on factors other than simply the presence of haematuria. NICE chronic kidney disease guidelines for such referral criteria will be published in September 2008. Until then, nephrology referral is recommended if there is concurrent:

- Evidence of declining GFR (by >10ml/min at any stage within the previous 5 years or by >5ml/min within the last 1 year)
- Stage 4 or 5 CKD (eGFR <30ml/min)

- Significant proteinuria (ACR ≥30mg/mmol or PCR ≥50mg/mmol)
- Isolated haematuria (i.e. in the absence of significant proteinuria) with hypertension in those aged <40.
- Visible haematuria coinciding with intercurrent (usually upper respiratory tract) infection

In the event the above criteria are not met, haematuria itself (visible or non-visible) does not require nephrology referral. Such patients should however continue to be monitored in primary care (see below).

7. Long term monitoring of patients with haematuria (visible or non-visible) of undetermined aetiology

Patients not meeting criteria for referral to urology or nephrology, or who have had negative urological or nephrological investigations, need long term monitoring due to the uncertainty of the underlying diagnosis. Patients should be monitored for the development of:

- voiding LUTS
- visible haematuria
- significant or increasing proteinuria
- progressive renal impairment (falling eGFR)
- hypertension (noting that the development of hypertension in older people may have no relation to the haematuria and therefore not increase the likelihood of underlying glomerular disease).

Decision algorithm for the investigation and referral of haematuria.