Urology Workshop-
Flank Pain and Haematuria

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• Haematuria Referral Pathway

• Flank Pain Pathway

• Questions and Queries...
Haematuria

• ‘The investigation and management of haematuria is confused by lack of clarity over definitions, diagnosis and specialist referral criteria.’
**Visible haematuria**
- Plasma creatinine estimated GFR
- Exclude transient causes including urinary tract infection

**Non-visible haematuria**
- Exclude transient causes including urinary tract infection

**Symptomatic non-visible haematuria**
- Yes
  - Blood pressure
  - Plasma creatinine estimated GFR
  - Send urine for ACR or PCR

**Asymptomatic non-visible haematuria**
- 2 of 3 dipstick tests positive
- No
  - Stop

**≥40 years**
- Normal
  - All of:
    - Estimated GFR ≥60 ml/min AND
    - ACR <30 or PCR <50 AND
    - Blood pressure <140/90 mm Hg
  - Urology assessment
    - Imaging and cystoscopy
  - Cause established

**<40 years**
- Abnormal
  - Any one of:
    - Estimated GFR <60 ml/min
    - ACR ≥30 or PCR ≥50
    - Blood pressure ≥140/90 mm Hg
  - Nephrology assessment
  - No cause established
  - Cause established
Definitions

• **Visible Haematuria (VH).** Otherwise referred to as ‘macroscopic haematuria’ or ‘gross haematuria’.

• **Non-Visible Haematuria (NVH).** Otherwise referred to as ‘microscopic haematuria’ or ‘dipstick positive haematuria’.
  
  – **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.
What is Positive?

Dipstick versus microscopy

Trace versus 1+

Haemolysed versus non-haemolysed
What is Significant?

Any single episode of VH.

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

Persistent a-NVH - Persistence is defined as 2 out of 3 dipsticks positive for NVH.
Transient Causes

Urinary tract infection (UTI)

Exercise induced haematuria (VH and NVH)

– 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.
Spurious Causes

- Menstrual contamination
- Sexual intercourse
- Foods such as beetroot, blackberries, and rhubarb
- Rhabdomyolysis
- Drugs such as doxorubicin, chloroquine, and rifampicin
- Chronic lead or mercury poisoning
Initial investigations for 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 (ACR) ratio
- Blood pressure
Urological Referral

- All patients with visible haematuria (any age)
- All patients with s-NVH (any age)
- All patients with a-NVH aged ≥40 yrs
What do we do?
Nephrological Referral

Declining GFR (by >10ml/min within 5 years or by >5ml/min within 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
What do they do?
Visible haematuria
Plasma creatinine estimated GFR
Exclude transient causes
including urinary tract infection

Non-visible haematuria
Exclude transient causes
including urinary tract infection

Symptomatic non-visible haematuria

Yes
Blood pressure
Plasma creatinine estimated GFR
Send urine for ACR or PCR

≥40 years

Normal
All of:
• Estimated GFR ≥60 ml/min AND
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• Blood pressure <140/90 mm Hg

Urology assessment
• Imaging and cystoscopy

Cause established

Abnormal
Any one of:
• Estimated GFR <60 ml/min
• ACR ≥30 or PCR ≥50
• Blood pressure ≥140/90 mm Hg

Nephrology assessment

No cause established

Asymptomatic non-visible haematuria
2 of 3 dipstick tests positive

No
Stop
Primary Care Follow Up

Primary care monitoring

Annual assessment (while haematuria persists) of blood pressure, estimated GFR, and ACR/PCR

Referral or re-referral to urology if:
- Development of visible haematuria or symptomatic non-visible haematuria

Referral to nephrology if:
- Significant or increasing proteinuria (ACR >30 or PCR >50)
- Estimated GFR <30 ml/min*
- Deteriorating estimated GFR* (by >5 ml/min fall within 1 year, or >10 ml/min fall within 5 years)
A PROSPECTIVE ANALYSIS OF 1,930 PATIENTS WITH HEMATURIA TO EVALUATE CURRENT DIAGNOSTIC PRACTICE

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<table>
<thead>
<tr>
<th>Findings in 1,930 patients evaluated for hematuria</th>
<th>Total No. Pts. (%)</th>
<th>No. Microscopic Hematuria (%)</th>
<th>No. Macroscopic Hematuria (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nondiagnostic</td>
<td>1,168 (60.5)</td>
<td>670 (68.2)</td>
<td>498 (52.5)</td>
</tr>
<tr>
<td>Renal Ca</td>
<td>12 (0.6)</td>
<td>3 (0.3)</td>
<td>9 (0.9)</td>
</tr>
<tr>
<td>Urothelial Ca</td>
<td>2 (0.1)</td>
<td>1 (0.1)</td>
<td>1 (0.1)</td>
</tr>
<tr>
<td>Bladder Ca</td>
<td>230 (11.9)</td>
<td>47 (4.8)</td>
<td>183 (19.3)</td>
</tr>
<tr>
<td>Prostate Ca</td>
<td>8 (0.4)</td>
<td>2 (0.2)</td>
<td>6 (0.6)</td>
</tr>
<tr>
<td>Stone disease</td>
<td>69 (3.6)</td>
<td>39 (4.0)</td>
<td>30 (3.2)</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>251 (13.0)</td>
<td>128 (13.0)</td>
<td>123 (13.0)</td>
</tr>
<tr>
<td>Nephrological disease</td>
<td>190 (9.8)</td>
<td>92 (9.4)</td>
<td>98 (10.3)</td>
</tr>
<tr>
<td>Totals</td>
<td>1,930 (100.0)</td>
<td>982 (100.0)</td>
<td>948 (100.0)</td>
</tr>
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</table>
SUMMARY POINTS

The terms visible haematuria should replace macroscopic or gross haematuria, and non-visible haematuria (both symptomatic and asymptomatic) should replace microscopic haematuria or dipstick positive haematuria.

Urine testing for haematuria should be performed for clinical reasons only—current evidence does not support opportunistic testing.

The test of choice for diagnosing haematuria is urine dipstick analysis—scores of ≥1+ are positive.

Transient or spurious causes of haematuria need to be excluded.

All patients aged ≥40 with haematuria should be investigated for urological disease.

All patients with no identified urological cause should be monitored long term.
Flank Pain Protocol

• Acute Flank Pain

• Renal colic is an acute, usually severe loin pain caused by passage of a stone down the ureter.

• Acute renal colic is a common condition with an annual incidence of 1-2 cases per 1000 and a lifetime risk of 10-20% for men and 3-5% for women.

• Patients usually present with acute pain and pose management challenges for the general practitioner, who may be uncertain whether immediate hospital admission is needed and, if not, how and when patients should be followed up.
Flank Pain Protocol

- **The most predictive features are** characteristic acute abdominal pain of short duration (less than 12 hours), loin or renal angle tenderness, and haematuria on testing [Eskelinen et al, 1998].

- The person is restless and cannot lie still (which helps to differentiate from inflammatory causes, such as peritonitis).

- The pain may radiate to the groin, scrotum, testis, labia.

- The pain is often accompanied by nausea, vomiting, hypotension, frequent urination, dysuria, oliguria, and haematuria.

- Patients with shock or fever must be admitted to hospital immediately.
Flank Pain Protocol

• Urinalysis
• Haematuria supports the diagnosis. Over 80% of patients with acute renal colic test positive for haematuria. A more recent study of people with renal stones found that 93% had a positive dipstick test and only 7% had a negative test [Argyropoulos et al, 2004].

• Ideally, if practicable, the urine should be tested and alternative diagnoses considered in those in whom the test is negative.
Flank Pain Protocol

• Initial Management

• Intramuscular diclofenac 75 mg is recommended as first line of treatment when the diagnosis is clear and there are no signs of complications. Where a non-steroidal analgesic is definitely contra-indicated an opiate combined with an antiemetic, such as morphine sulphate and cyclizine, should be given.

• People receiving NSAIDs are more likely to achieve a greater reduction in pain and less likely to require further pain relief than people given injectable opioids [Holdgate and Pollock, 2004].
Flank Pain Protocol

• Decide whether or not to admit

• **Urgent admission** is indicated in the following circumstances:
  
  • Failure to respond to analgesia after 1 hour
  • Presence of fever
  • Symptoms of systemic illness or infection.
  • Known solitary kidney
  • Inability to take adequate fluid due to nausea and vomiting
  • Pregnancy
Flank Pain Protocol

• Non-acute flank pain

• If dipstick positive for blood – refer non-urgently to urology via non-visible haematuria pathway.

• If dipstick negative for blood and renal source suspected then request renal USS from primary care. If renal USS normal and urine dipstick negative then consider other causes.
Unanswered Questions....

• Can you explain whether or not there is a one stop shop urology clinic and for which conditions?
• Can you clarify the use of CTKUB and plain KUB.....should we be doing these things? Why doesn’t primary care have access to CTKUB?
• How quickly will you see patient with renal colic if they haven’t been admitted? (note the recent BMJ article stating patients with renal colic should have rapid access to USS within 1 week)
• We would like clarity... if a patient has been off-shore/on holiday, have had what sounds like renal colic but it has all settled and urinalysis is clear, do they still need referred?
Unanswered Questions...

- Should we be doing calcium, urate or anything else to investigate renal stones?
- Can we have more information on spurious causes of dip stick +ve for blood?
- Should we doing PSA/DRE in patients > 40 years with haematuria?
- When dips ticking for blood, how fresh does the sample need to be (we batch test)?
- In NVH is it that MSSU is ‘not needed’ or is it ‘not appropriate’ to confirm blood?
- How much blood does there need to be in urine for it to become visible?
- How long after a bout of renal colic would you expect haematuria to persist?
Unanswered Questions...

- Can we have clarity about hematospermia, when reassurance is appropriate and what are the red flags for referral?
- Can we have a case discussion event; many of our patients just aren’t fitting into the pathway?
- We’d like more information more discussion and guidance on referral for recurrent UTIs, sterile pyuria and PSA?
- We’d welcome some face to face education with the urologists about PSA testing.
- Can we have guidance about when to refer sterile pyuria which includes reference frailty, multiple morbidity and age?
so does anyone have any questions?