**Microhematuria Evaluation Algorithm**

**Patient with microhematuria**

1. **RBC/HPF on UA with microscopy**
2. **History and physical exam**
   - Focus on risk factors for urothelial cancer and non-malignant causes
3. **Evaluation performed**
4. **Evaluation negative**
5. **Repeat urinalysis positive**
6. **Repeat urinalysis positive**
7. **Repeat urinalysis positive**
8. **Repeat urinalysis negative**
9. **Repeat urinalysis negative**
10. **Repeat urinalysis negative**
11. **Repeat urinalysis positive**
12. **Non-malignant or gynecologic source identified**
13. **Non-malignant or gynecologic source ruled out**
14. **Non-malignant or gynecologic source identified**
15. **Non-malignant or gynecologic source identified**

**Risk stratification**

1. **Low Risk**
   - All of the following:
     - Women age < 50; Men age < 40 yrs
     - Never smoker or < 10 pack-years
     - 3-10 RBC/HPF on one UA
     - No additional risk factors for urothelial cancer
     - No prior episodes of MH
2. **Intermediate Risk**
   - Any of the following:
     - Women age 50-59; Men age 40-59 yrs
     - 10-30 Pack-years smoking
     - 11-25 RBC/HPF on one UA
     - One or more additional risk factors for urothelial cancer
     - Previously low-risk, no prior evaluation and 3-25 RBC/HPF on repeat UA
3. **High Risk**
   - Any of the following:
     - Women and men age ≥ 60 yrs
     - > 30 Pack-years smoking
     - > 25 RBC/HPF on one UA
     - History of gross hematuria
     - Previously low-risk, no prior evaluation and > 25 RBC/HPF on repeat UA

**Shared decision-making**

- **Repeat Urinalysis within 6 months OR Cystoscopy and Renal Ultrasound**
- **Repeat Urinalysis within 12 months**
- **Re-evaluate**
  - If patient develops gross hematuria, increase in degree of microhematuria or new urologic symptoms

**Evaluation directed by signs/symptoms**

- **Include urine culture if infection is suspected**

**Consider Repeat Urinalysis within 12 months**

**Cystoscopy and Renal Ultrasound**

- **Evaluation performed**
  - Evaluation negative
  - Evaluation positive

**Cystoscopy and CT Urogram**

- **Treat as indicated**
  - If urologic diagnosis is non-malignant, repeat urinalysis after treatment

**High Risk**

- **Repeat Urinalysis**
- **Repeat Urinalysis**
- **Release from care**

**Intermediate Risk**

- **Repeat Urinalysis**
- **Repeat Urinalysis**
- **Release from care**

**Low Risk**

- **Repeat Urinalysis**
- **Repeat Urinalysis**
- **Release from urologic care**

**1. Main risk factors for urothelial cancer are those in the AUA risk stratification system (age, male sex, smoking, degree of microhematuria and history of gross hematuria). Additional risk factors for urothelial carcinoma include but are not limited to: irritative lower urinary tract voiding symptoms, history of cyclophosphamide or ifosfamide chemotherapy, family history of urothelial carcinoma or Lynch Syndrome, occupational exposures to benzene chemicals or aromatic amines, history of chronic indwelling foreign body in the urinary tract.

2. If medical renal disease is suspected, consider nephrologic evaluation, but pursue concurrent risk-based urological evaluation.

3. Patients may be low-risk at first presentation with microhematuria, but may only be considered intermediate- or high-risk if found to have persistent microhematuria.

4. There are non-malignant and gynecologic sources of hematuria that do not require treatment and/or may confound the diagnosis of MH. Clinicians can consider catheterized urine specimen in women with vaginal atrophy or pelvic organ prolapse. Clinicians must use careful judgment and patient engagement to decide whether to pursue MH evaluation in the setting of chronic conditions that do not require treatment, such as the aforementioned gynecologic conditions, non-obstructing stones or BPH.

5. Clinician may perform cross-sectional imaging with urography or retrograde pyelograms if hematuria persists after negative renal ultrasound.

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