

HEMATURIA, BASICS

DEFINITION: presence of **BLOOD IN URINE (MACROSCOPIC OR MICROSCOPIC)** from any level of the urinary tract.

MICROHEMATURIA > 2-3 red blood cells/field

High prevalence, low risk for urogenital tumor

MACROHEMATURIA > 100 red blood cells /field

High sensitivity for urogenital cancers

- 83 % for bladder cancer
- 66 % for UTUC
- 48 % for renal cell cancer

INITIAL HEMATURIA: suggests disease of urethra, prostate or bladder neck

TERMINAL HEMATURIA: suggests bladder disease

TOTAL HEMATURIA: suggests upper urinary tract disease

MOST COMMON CAUSES FOR HEMATURIA:

- UROGENITAL CANCERS
- URINARY LITHIASIS
- URINARY TRACT INFECTIONS
- UROLOGICAL PROCEDURES
- MEDICAL NEPHROPATHY
- DRUGS
- PELVIC RADIOTHERAPY

SIGNS AND SYNDROMES ASSOCIATED WITH HEMATURIA:

CYSTITIS: suprapubic pain + dysuria

ACUTE PROSTATITIS: dysuria + perineal pain + tenesmus + fever

CANCER: constitutional symptoms + gross hematuria

URINARY LITHIASIS: renal colic + nausea/vomiting

ACUTE PYELONEPHRITIS: flank pain + fever

GLOMERULONEPHRITIS: swelling + high blood pressure

ANAMNESIS: **SMOKING HISTORY, PREVIOUS** urologic history, trauma, pelvic radiotherapy, **TREATMENTS** (anticoagulants, cyclophosphamide, analgesic abuse) or **AROMATIC AMINE EXPOSURE** (hair dyes, paints, leather, rubber), **LUTS**

CANCER SUSPICION: MALE, >40 YO, TOBACCO HABIT OR CHEMICAL EXPOSURE, HEMATURIA WITH CLOTS

PHYSICAL EXAMINATION: **VITAL SIGNS** (HR, BP, Temperature), **PALPATION OF THE ABDOMEN** (palpable bladder and palpable masses), **KIDNEY FOSSA, DIGITAL RECTAL EXAM, EXTERNAL GENITALIA**

COMPLEMENTARY EXAMINATIONS:

1. EMERGENCY ROOM:

- **URINALYSIS:**

RBC CASTS, PROTEINURIA → glomerular disease

URINE EOSINOPHILS → acute interstitial nephritis

PYURIA, BACTERIURIA → UTI

STERILE PYURIA, HEMATURIA → renal tuberculosis

- **HEMOSTASIS TEST AND COMPLETE BLOOD COUNT**

2. OUTPATIENT CONSULTATION:

- **DIAGNOSTIC ULTRASOUND:** high sensitivity for bladder cancer

- **CT UROGRAM:** evaluation of upper urinary tract

- **MRI:** complex renal masses evaluation

- **URETHROCYSTOSCOPY:** important test to evaluate the anatomy of the bladder and the urethra.

TREATMENT:

- **NON ANEMIZING, NO CLOTS, HEMODYNAMIC STABILITY:** CONSERVATIVE MANAGEMENT WITHOUT URETHRAL CATHETERIZATION. HOSPITAL DISCHARGE with adequate daily fluid intake, diagnostic imaging requested and outpatient appointment with urology

- **ANEMIZING AND/OR HEMODYNAMIC INSTABILITY:**

• MONITORING, HEMODYNAMIC CONTROL, FLUID THERAPY ± BLOOD TRANSFUSION THERAPY

• URETHRAL CATHETERIZATION WITH COUVELAIRE TIP SILICONE FOLEY CATHETER if AUR or clots

• MANUAL BLADDER IRRIGATION followed by CONTINUOUS BLADDER IRRIGATION to clear the bladder

CRITERIA FOR HOSPITAL ADMISSION:

- Hemodynamic instability
- Urosepsis
- Acute renal failure or coagulopathy
- Clot retention
- Comorbidity o psycho-social criteria
- Hematuria after trauma

