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Department of Health Research
Ministry of Health and Family Welfare, Government of India

INDIAN COUNCIL OF MEDICAL RESEARCH
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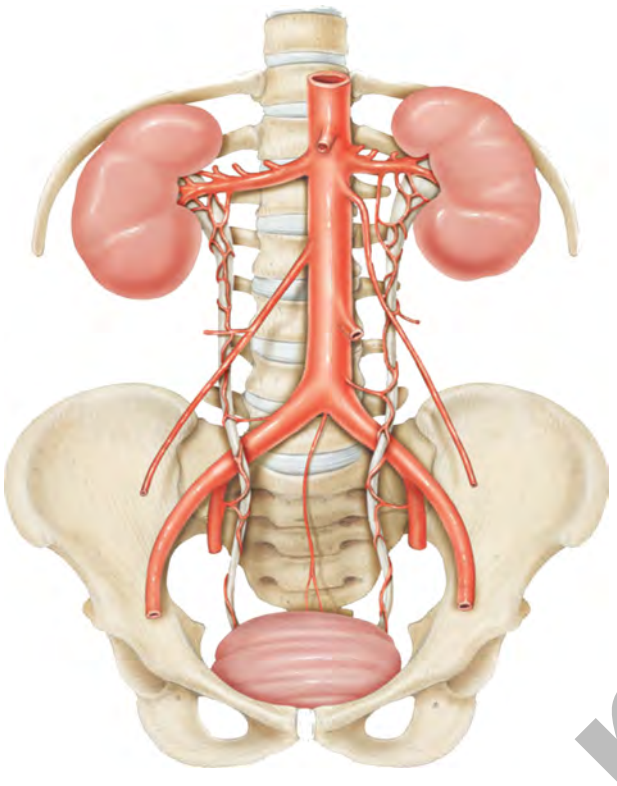
Standard Treatment Workflow (STW) for the Management of
GROSS HAEMATURIA
ICD-10-R31.0

PERFORM THOROUGH CLINICAL EVALUATION

- Blood in urine - red coloured or dark coloured
- May be associated with pain:
  - Pain during voiding (urethra)
  - Pain in suprapubic region (bladder)
  - Pain in flank (kidney)
- Acute retention of urine due to clots
- Haematuria associated with clots (severe)



EXAMINATION
- Pulse, blood pressure
- Check for pallor
- Check for anasarca
- Per abdomen examination: Palpable bladder, flank mass
- Digital rectal examination: Enlarged prostate, hard nodular/ smooth surfaced prostate
- Rule out vaginal causes of bleeding

RED URINE BUT NOT HAEMATURIA
- Foods: beetroot, blackberry, rhubarb
- Medicines: rifampicin, pyridium

Even single episode of haematuria warrants complete evaluation

MAKE A CLINICAL DIAGNOSIS: IS HAEMATURIA

INITIAL
- Urethra: stone, urethritis, stricture
- Prostate: inflammation, benign hyperplasia, malignancy

TOTAL
- Kidney: stone, malignancy (renal parenchyma, pelvis/ureter, genito-urinary tuberculosis
- Ureter: stone, malignancy, genito- urinary tuberculosis
- Bladder: infection, genitourinary tuberculosis, stone, malignancy)

TERMINAL
- Bladder: stone, tumor at bladder neck
- Prostate: inflammation, benign hyperplasia, malignancy

HOW TO INVESTIGATE

ESSENTIAL
- Urine examination - routine, microscopy
- Hemoglobin estimation
- Kidney function tests (KFT)
- Ultrasonography of kidney urinary bladder and prostate region

DESIRABLE
- Contrast enhanced computed tomography of kidney urinary bladder region/ intravenous pyelography (if KFT normal)
- Magnetic resonance imaging of Kidney urinary bladder region (if KFT deranged)
- Urine cytology if > 40yrs or smoker
- Cystoscopy if > 40 years or smoker

OPTIONAL
- Urine culture
- Urine for active sediments(if nephrotic/ nephritic syndrome suspected)
- PT/INR (if bleeding disorder suspected)
- Serum prostate specific antigen (if required)
- Urine for acid fast bacilli - 3 samples (if tuberculosis suspected)

WHEN TO REFER (WARNING SIGNS)
- Deranged kidney functions
- Suspecting malignancy
- Haematuria with hypertension / albuminuria
- Persistent severe haematuria

HOW TO TREAT

GENERAL
- Start intravenous fluids if required (primary level)
- If Anaemia - may trans-fuse blood as required (primary level)
- Manage clot colic / flank pain with analge-sics (primary level)
- If Acute urinary reten-tion - catheterise with 20/22Fr 3 way Foley and may start continuous irrigation with normal saline (Primary level)
- Cystoscopic clot evacu-ation may be per-formed if feasible (ter-tiary level)
- If basic evaluation and management facilities are unavailable - refer (tertiary level)

SPECIFIC
- **Haematuria should be considered as a symptom of genitourinary malignancy in patients >40years old until proven otherwise**
- Suspected nephrotic/nephritic syndrome: cola coloured urine, proteinuria, anasarca, hypertension - Refer to nephrologist (tertiary level)
- Suspect urinary tract infection : presents with dysuria, increased frequency of voiding and other irritative lower urinary tract symptoms with/ without fever- treat with broad spectrum oral antibiotics (primary level)

DIFFERENTIAL DIAGNOSIS FOR CHRONIC CONDITIONS LEADING TO HAEMATURIA

	Stones	Renal cell cancer	Bladder tumor	Genito-urinary tuberculosis
Symptoms	Flank pain Ureteric colic Recurrent urinary tract infection Haemturia	Flank mass Flank pain Haematuria	Haematuria Urinary retention	Dysuria Frequency Nocturia Haematuria
Investiga-tions	Ultrasonography Xray KUB Intravenous pyelography or Computed tomography	Ultrasonography Computed tomography	Ultrasonography Computed tomography Urine cytology	Urine analysis Urine acid fast bacilli Urine tuberculosis culture Gene expert (optional) Intravenous pyelography or Computed tomography
Treatment	>5mm or symptomatic - refer to urologist	Mostly surgical treatment - refer to urologist	Mostly surgical treatment - refer to urologist	Oral Antitubercular treat-ment - 6months, refer to a urologist, close follow up

REFERENCES

1. Standard treatment guidelines in urology: Ministry of Health and Family selfare

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit our web portal (**stw.icmr.org.in**) for more information.