

Section H: Urological, adrenal and genitourinary systems

Clinical/Diagnostic Problem	Investigation	Recommendation (Grade)	Dose	Comment
H01. Hematuria, macro- or microscopic	US	Indicated [B]	0	US is indicated after a thorough clinical workup. If microscopic hematuria persists and the diagnosis is still uncertain, US is indicated in patients 40 and under. However, US may miss some upper tract pathology, including some calculi. Bladder US may detect bladder tumours but cystoscopy is more sensitive.
	CT	Indicated [B]	⊕⊕⊕	CT Urography is indicated in patients over the age of 40 with persistent hematuria.
H02. Hypertension without evidence of renal disease, responsive to medication (See also H03)	All imaging	Not indicated [B]	0	Imaging is not indicated if there is no evidence of renal disease.
H03. Hypertension: in patients unresponsive to medication	NM	Indicated [B]	⊕* – ⊕⊕	Captopril renography is best to check for functionally significant renal artery stenosis, if interventional procedure or surgery is contemplated.
	CTA	Specialized investigation [B]	⊕⊕⊕	CTA is the imaging study of choice for visualizing the renal arteries.
	MRA	Specialized investigation [B]	0	MRA may be performed where CTA is contraindicated.
	US	Specialized investigation [B]	0	Doppler US can be used if special expertise is available.
H04. Renal failure	Renal US	Indicated [B]	0	US is the best initial imaging modality in patients with renal failure to determine if there is an obstructive cause
H05. Renal colic	CT	Indicated [B]	⊕⊕⊕** – ⊕⊕⊕	Low dose unenhanced CT is the preferred imaging modality for the detection of urinary tract calculi.
	US / Abdominal XR	Indicated only in specific circumstances [B]	0/⊕	Combined US and abdominal XR may be used where CT is not available or under special circumstances such as pregnancy to reduce radiation exposure. US and abdominal XR are less sensitive than unenhanced CT.

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H06. Renal calculi in absence of acute colic	Abdominal XR	Indicated [B]	⊕	If follow up of known renal stones is required, abdominal XR may be sufficient for those visible on XR.
	CT	Indicated [B]	⊕⊕** – ⊕⊕⊕	If XR does not show a calculus, CT is indicated if there is strong clinical suspicion.
	US	Indicated only in specific circumstances [B]	0	US may be used if CT is not available. US is less sensitive than either abdominal XR or CT for detecting urinary tract calculi.
	NM	Indicated only in specific circumstances [B]	⊕⊕	Nuclear Medicine can be used to assess the function of a kidney that may be damaged by chronic renal calculi.
H07. Renal mass	US	Indicated [B]	0	US is indicated as an initial imaging modality for a suspected renal mass.
	CT	Indicated [B]	⊕⊕⊕⊕	CT without and with contrast enhancement is indicated as the primary imaging modality for evaluating solid renal masses.
	MRI	Specialized investigation [B]	0	MRI may help to assess a renal mass not adequately characterized by CT or if CT is contraindicated, e.g., known allergy to CT contrast.
	NM	Indicated only in specific circumstances [B]	⊕⊕	Nuclear medicine can be used to assess renal function prior to surgery for renal mass.
H08. Urinary tract obstruction	US	Indicated [B]	0	Ultrasound is the modality of choice for the initial investigation.
	NM	Specialized investigation [B]	⊕* – ⊕⊕⊕	A diuretic renal scan may be useful to confirm the presence and level of a urinary tract obstruction.
	CT	Indicated only in specific circumstances [B]	⊕⊕⊕⊕	CT may be required for further investigation if an obstruction is identified.
H09. Urinary tract infection in adults (For children see L76 – L78)	US	Indicated only in specific circumstances [B]	0	Imaging is not indicated initially for adults with a urinary tract infection, but it is indicated (1) if infection does not resolve with appropriate antibiotic therapy and (2) in men following one proven UTI or in women with a proven recurrence of UTI.
	CT	Specialized investigation [B]	⊕⊕⊕⊕	CT may be ordered if a severe infection does not respond to treatment, or if an abscess or other complication is suspected.

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H10. Evaluation of transplanted kidney	US with Doppler	Indicated [B]	0	US is the modality of choice for initial evaluation for complications in a transplanted kidney and can be used for biopsy guidance.
	NM	Indicated only in specific circumstances [B]	♾* – ♾♾	TC99m mag 3 with effective renal plasma flow (eRPF) may also be useful for evaluation of renal transplant complications.
H11. Scrotal mass or pain	US	Indicated [B]	0	US is the best imaging modality for evaluating scrotal swelling and/or scrotal pain. US can differentiate testicular from extra-testicular lesions. symptoms requires ENT, neurological, or neurosurgical expertise.
H12. Testicular torsion	US with Doppler	Indicated [B]	0	Testicular torsion can be diagnosed clinically. If imaging is required US is the best modality, and must be performed emergently.
	NM	Indicated only in specific circumstances [B]	♾* – ♾♾	NM can be used when US is not available or inconclusive.

* Lower dose for children

** If using a low-dose technique