HAEMATURIA

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Haematuria is the presence of blood in the urine. It can be clas sified as visible (VH, or macroscopic) and non-visible (NVH, microscopic or dipstick). Microscopic haematuria is defined as the presence of red blood cells (RBCs) on microscopic exam ination of the urine and is variably defined as three or more or five or mor e RBCs per high-power field. A few RBCs can be found in the urine of healthy people, especially after rigorous exercise, sexual intercourse or from menstrual contamina with an upper limit of 1 million RBCs per 24 hours considered normal. Overall, 30–60% of patients with NVH are found to have an underlying cause, depending upon the age and risk factors of the population studied and the type of investigation performed, but the rate of malignancy is around 5% for those with NVH compared with almost 20% for those with VH. Both VH and NVH can arise from anywhere in the renal tract, including renal parenchyma, renal pelvis, ureter, bladder, prostate and urethra. Certain diseases outside the renal tract may also lead to haematuria (T able 83.15). There is a lack of consensus between national guidelines regarding who should be investigated for haematuria. How ever, all patients should hav e a digital rectal examination to evaluate prostate size and consistency , urine culture to ex infection and urine cytology to aid diagnosis of urothelial malignancy in those at higher risk (smokers, occupational his tory , family history , elderly). Serum estimated glomerular fil tration rate (eGFR) should be assessed, and prostate-specific antigen (PSA) testing should be discussed in men with a 10- to 15-year life expectancy to assess prostate cancer risk. Those with visible haematuria should under go evaluation of the LUT with cystoscopy and upper urinary tract with CT urogram. Patients with NVH should have the urine microscopy repeated on three occasions, and only be investigated if the haematuria is persistent. Patients with NVH who are over 40 years old should also undergo evaluation with flexible cystoscopy and renal tract imaging (ultrasound or CT urogram), but investi gations could be rationalised to flexible cystoscopy and renal Summary box 83.7 Haematuria /uni25CF Eduard Heinrich Henoch , 1820–1910, Professor of Diseases of Children, Berlin, Germany , described this form of purpura in 1868. Johann Lucas Schönlein , 1793–1864, Professor of Medicine, Berlin, Germany , published his description of this form of purpura in 1837. /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF - /uni25CF /uni25CF /uni25CF - /uni25CF /uni25CF /uni25CF tion, /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF - /uni25CF clude - - tract ultrasound in younger patients deemed to be at low risk of urothelial malignancy . In those with NVH and proteinuria, where the above urological investigations are negative, nephro - logical causes should be sought.

Patients with haematuria require upper tract investigation with CT

urogram and lower tract investigation with cystoscopy Site Cause Kidney Cancer (renal cell, urothelial, squamous cell, adenocarcinoma) Stones Infection Trauma Cystic diseases (e.g. medullary sponge kidney, polycystic kidney disease) Vascular disorder (e.g. vascular malformations, renal vein thrombosis) Nephrological causes (IgA nephropathy, glomerulonephritis, vasculitis, Henoch– Schönlein purpura) Papillary necrosis Ureter Cancer (urothelial) Stones Infection

Trauma Benign diseases (PUJ obstruction, stricture) Cancer (urothelial, squamous cell, Bladder adenocarcinoma) Stones Infection (bacterial, TB, schistosomiasis) Trauma Chronic in /f_l ammatory conditions (IC, radiation cystitis, ketamine cystitis, cyclophosphamide cystitis) Prostate Cancer Benign prostatic enlargement Infection Medical Bleeding disorders (e.g. sickle cell, thrombophilia) Anticoagulation therapy Iatrogenic Urethral instrumentation Nephrostomy IC, interstitial cystitis; IgA,

immunoglobulin A; PUJ, pelviureteric junc

tion; TB, tuberculosis.

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