What is hematuria?

Hematuria is defined as the presence of at least 5 red blood cells (RBCs) per microliter of urine

What are the causes of red urine?

HEME POSITIVE

Myoglobin
Haemoglobin

HEME
NEGATIVE

Rifampicin
Pyridium
Beetroot
Food color

Is it upper urinary tract hematuria or lower urinary tract hematuria?

- Upper urinary tract sources of hematuria originate within the nephron (glomerulus, convoluted or collecting tubules, and interstitium). Lower urinary tract sources of hematuria originate from the pelvocalyceal system, ureter, bladder, or urethra. **Hematuria from within the glomerulus is often associated with brown, cola or tea-colored, or burgundy urine, proteinuria >100 mg/dL via dipstick, urinary microscopic findings of RBC casts,** and deformed urinary RBCs (particularly acanthocytes).Hematuria originating within the convoluted or collecting tubules may be associated with the presence of leukocytes or renal tubular epithelial cell casts.
- **Lower urinary tract sources** of hematuria may be associated with gross hematuria **that is bright red or pink, terminal hematuria (gross hematuria occurring at the end of the urine stream), blood clots**, normal urinary RBC morphology, and minimal proteinuria on dipstick (<100 mg/dL).

What are the causes of gross hematuria?

- Patients with gross hematuria present additional challenges because of the associated parental anxiety. The most common cause of gross hematuria is bacterial urinary tract infection

Urinary tract infection	**Postinfectious glomerulonephritis**
Meatal stenosis	Henoch-Schönlein purpura nephritis
Perineal irritation	**IgA nephropathy**
	Trauma
	Urolithiasis
	Hypercalciuria
	Coagulopathy
	Tumor

What is acute nephritic syndrome?

- Patients with hematuria can present with a number of symptoms suggesting specific disorders. Tea- or cola-colored urine, facial or body edema, hypertension, and oliguria are classic symptoms of **acute nephritic syndrome**

What are the d/d?

- Poststreptococcal GN is most common in children aged 5-12 yr and uncommon before the age of 3 yr. The typical patient develops an acute nephritic syndrome 1-2 wk after an antecedent streptococcal pharyngitis or 3-6 wk after a streptococcal pyoderma.
- A history ofrecent upper respiratory, skin, or gastrointestinal infection suggests postinfectious glomerulonephritis, hemolytic-uremic syndrome, or HSP nephritis. Rash and joint complaints suggest HSP or SLE nephritis.
- Hematuria associated with glomerulonephritis is typically painless, but can be associated with flank pain when acute or unusually severe.
- Frequency, dysuria, and unexplained fevers suggest a urinary tract infection, whereas renal colic suggests nephrolithiasis.
- A flank mass can suggest hydronephrosis, renal cystic diseases, renal vein thrombosis, or tumor