### Causes of Isolated Microscopic Haematuria


#### Patient < 50 years of age

**Glomerular**
- IgA nephropathy (increased incidence in Asians)
- Thin basement membrane disease (benign familial haematuria)
- Hereditary nephritis (Alport’s syndrome)
- Mild focal glomerulonephritis of other causes

**Non-glomerular: Upper urinary tract causes**
- Nephrolithiasis
- Pyelonephritis
- Polycystic kidney disease
- Medullary sponge kidney
- Hypercalciuria, hyperuricosuria, or both, without documented stones
- Renal trauma
- Papillary necrosis
- Ureteral stricture and hydronephrosis
- Sickle cell trait or disease
- Renal infarction or arteriovenous malformation
- Renal tuberculosis in endemic areas or in patients with HIV

**Non-glomerular: Lower urinary tract causes**
- Cystitis, prostatitis, and urethritis
- Benign bladder and ureteral polyps and tumours
- Bladder cancer
- Prostate cancer
- Strictures of the urethra or meatus
- Schistosoma haematobium infection

**Uncertain**
- Exercise haematuria
- ‘Benign haematuria’ (unexplained microscopic haematuria)
- Over-anticoagulation (usually with warfarin)
- Factitious haematuria (usually presents with gross haematuria)

#### Patient > 50 years of age

**Glomerular**
- IgA nephropathy
- Hereditary nephritis (Alport’s syndrome)
- Mild focal glomerulonephritis of other causes

**Non-glomerular: Upper urinary tract causes**
- Nephrolithiasis
- Renal-cell cancer
- Polycystic kidney disease
- Pyelonephritis
- Renal-pelvis or ureteral transitional-cell cancer
- Papillary necrosis
- Renal infarction
- Ureteral stricture and hydronephrosis
- Renal tuberculosis

**Non-glomerular: Lower urinary tract causes**
- Cystitis, prostatitis, and urethritis
- Bladder cancer
- Prostate cancer
- Benign bladder and ureteral polyps and tumours

**Uncertain**
- Exercise haematuria
- Over-anticoagulation (usually with warfarin)