

Chronic Kidney Disease

Definition

- Kidney damage for over 3 months

or

- GFR <60 mL/min/1.73m² for > 3 months

Classification

- Stage 1
- Stage 2
- Stage 3a
- Stage 3b
- Stage 4
- Stage 5

Causes

HIDDEN

- Hypertension
- Infection
- Diabetes
- Drugs
- Exotica (vasculitis)
- Nephritides

Symptoms

- Fatigue
- Weakness
- Anorexia
- Vomiting
- Metallic Taste
- Pruritus
- Restless legs
- Bone Pain
- Infertility
- Shortness of Breath
- Oedema

Symptoms are common when urea is >40 mmol/L

Signs

- Pallor
- Exorications
- Bruising
- Hearing Aid

- Neck Lines
- AV Fistula
- Heaving apex
- Loud second heart sound
- JVP
- Abdominal scars
- Polycystic Kidneys
- Tenckhoff Catheter exit site
- Fundi (Diabetic/Hypertensive Retinopathy)
- Peripheral Neuropathy
- Peripheral Oedema

Investigations

- FBC (anaemia)
- U+E (increased urea and creatinine) - isn't very useful in the context of dialysis
- Urinalysis if still passing urine
- Calcium/Phosphate/ALP/Parathyroid Hormone
- Urinary Protein:Creatinine Ratio
- USS Renal Tract
- Renal biopsy

Management

- Refer early to a Nephrologist
- Treat reversible causes
- Stop Nephrotoxic drugs
- Treat Cardiovascular Risk
- Lifestyle advice (stop smoking, healthy weight)
- Sodium Restriction
- Moderate Protein Diet
- Low Potassium diet
- Low Phosphate diet
- Fluid Restriction if anuric/oliguric
- Drugs

Anti-Hypertensives (ACE-I) Loop Diuretics Phosphate Binders Activated
Vitamin D Iron Supplements EPO

- Immunisations (Viral Hepatitis, Seasonal Influenza)
- Dialysis by HD or PD is equally effective

Peritoneal Dialysis

- Removes fluids and solutes by osmosis
- Simpler to perform, requires less complex equipment
- Problems include peritonitis, catheter malfunction, loss of membrane function
- PD Peritonitis usually manifests itself as a cloudy bag

Haemodialysis

- 4 hours 3 times per week usually
- Blood flows on one side of a semipermeable membrane while dialysis fluid flows in the opposite direction
- Solute Transfer occurs by diffusion
- Requires good, reliable vascular access
- Fistula > Line

Transplantation

- Less life disruption
- Long term immunosuppression to prevent rejection
- Increased risk of infection/malignancy
- Live Donor/Post-mortem donor

Complications

- Annual mortality is 20%
- Anaemia
- Protein Malnutrition
- Bleeding Tendency
- Infection risk (Uraemia causes granulocyte dysfunction, sepsis related mortality is 100 to 300 times greater)
- CVS Disease (IHD, HF and Stroke, HTN)
- Malignancy is commoner in dialysis patients
- Bone Disease
- Neuropathy
- Complications of Immunosuppression