

Medication and Renal Disease

Clinical Pharmacist

Introduction

- Role of the kidney
 - Blood pressure
 - Bone Disease
 - Anaemia associated with impaired kidney
 - Summary
-

The Role of the Kidney

- Filter blood
 - Excretion of waste products
 - Help control blood pressure
 - Regulate water and electrolyte balance
 - Help keep bones healthy
 - Help make red blood cells
-

Blood Pressure (BP)

- ❑ Kidney helps control BP
 - ❑ High BP can cause renal impairment
 - ❑ Renal impairment can cause high BP
 - ❑ Important to Control BP
 - ❑ Controlling BP can delay dialysis
-

Blood pressure targets

□ Pre-dialysis

- 130/80
- 125/75 (proteinuric)

□ Haemodialysis

- Before - 140/90
 - After - < 130/80
-

Treatment of high blood pressure

- Reduce the amount of water in the
 - Water tablets
 - Vasodilators
 - Dilate blood vessels → reduce BP
 - Beta-blockers
 - Make heart beat more efficiently
 - Reduce heart rate → reduce BP
-

Fluid Balance

- Kidney removes excess water

 - Too much fluid
 - Over load → ankle swelling

 - Too little fluid
 - Dehydration
-

Treatment of fluid overload

- Non-dialysis patients
 - Diuretics (water tablets)
 - May require dialysis

 - Dialysis patients
 - Drink less
 - Water tablets don't work
 - Dialysis
-

Renal Bone Disease

- Kidney helps keep bones healthy

 - Kidney impairment → bone disease
soft bones

 - Causes
 - High Phosphate
 - Low Calcium
 - Low Vitamin D
-

Treatment of Renal Bone Disease

Low Calcium	High Phosphate	Low Vitamin D
Calcium Supplements	Diet Control	Needed to absorb Calcium
Dialysis fluid	Phosphate binders	Vitamin D Supplements
Vitamin D		

Anaemia

- ❑ Kidney helps make red blood cells
 - ❑ Kidney makes Erythropoietin (EPO)
 - ❑ EPO stimulates bone marrow make red blood cells
 - ❑ Kidney impairment – No EPO

 - ❑ Treatment – EPO injection
-

-
- Need iron stores to make red blood cells
 - Kidney disease – Low iron stores

 - Treatment
 - Iron tablets
 - Iron injection
-

Hepatitis vaccination

- Health and safety
 - Frequent hospital visit
 - Hep B vaccine

 - Vaccine
 - Given as 3 or 4 injections before starting dialysis
-

Other issues

- Leg Cramps
 - On dialysis or at night
 - Quinine Sulphate

 - Restless legs
 - Clonazepam
-

Pain killers and renal impairment

Safe to use

- Paracetamol
- Co-codamol
- Codeine*
- Co-Dydramol*
- Dihydrocodeine*

* May cause drowsiness

Avoid

- Non-steroidal anti-inflammatory drugs
 - Ibuprofen
 - Diclofenac
 - Meloxicam
 - Aspirin (300mg dose for pain) [75mg daily dose for blood thinning is OK]
 - May accelerate kidney failure
-

Ailment	First choice treatment	Medication to avoid
Coughs and cold	Simple linctus Menthol Steam inhalation	Decongestants Guaifenesin Dextromethorphan
Indigestion	Preparations containing calcium (unless calcium is high)	Preparations containing sodium, potassium or magnesium
Diarrhoea	No treatment 2 nd choice - Loperamide	Rehydration sachets
Hayfever	Antihistamine eyedrops Cetirizine Chlorphenamine	Pseudoephedrine

Summary

- ❑ Medication only prescribed if needed
 - ❑ Important to take medication
 - ❑ Information in presentation limited

 - ❑ Further Information
 - Nicholas Weaver (Pharmacist) 01603 – 287139
 - 'Pharmacy helpline' 01603 – 286286
 - Contact Renal Unit or Consultant
-