Erythropoietin

Red blood cells are made when the bone marrow is stimulated by erythropoietin.

GENERIC AND PROPRIETARY NAMES
- Darbepoetin alfa: Aranesp.
- Epoetin alfa and beta: Eprex, NeoRecormon.

ACTION
- Erythropoietin is a naturally occurring hormone, produced by the kidneys.
- It stimulates the bone marrow to make red blood cells.
- The two types of erythropoietin, epoetin and darbepoetin, work in similar ways.

CLASSIFICATION
- Drugs used in hypoplastic, haemolytic and renal anaemias.

INDICATIONS
Darbepoetin alfa:
- Anaemia associated with chronic renal failure in patients on dialysis.
- Anaemia associated with chronic renal failure in patients not on dialysis.
- Anaemia in adults with non-myeloid malignancies who are receiving chemotherapy.
- Anaemia in adults receiving cancer chemotherapy.
- To increase yield of autologous blood in pre-donation programmes in cases of moderate anaemia.
- Moderate anaemia before elective orthopaedic surgery.

Epoetin alfa and beta:
- Anaemia associated with chronic renal failure in patients on haemodialysis.
- Anaemia associated with chronic renal failure in adults on peritoneal dialysis.
- Anaemia in adults receiving cancer chemotherapy.
- To increase yield of autologous blood in pre-donation programmes in cases of moderate anaemia.
- To increase yield of autologous blood in pre-donation programmes in cases of moderate anaemia.
- Moderate anaemia before elective orthopaedic surgery.

CONTRAINDICATIONS
- Pure red cell aplasia following erythropoietin.
- Uncontrolled hypertension.

CAUTIONS
- Poorly controlled blood pressure.
- Sickle cell disease.
- Ischaemic vascular disease.
- Thrombocytosis.
- Epilepsy.
- Malignant disease.
- Chronic liver failure.
- Cardiovascular disease.
- Breastfeeding.

COMMON SIDE-EFFECTS
- Increased blood pressure.
- Problems at injection site.
- Headache.
- Epileptic seizures.
- Influenza-like symptoms.
- Skin reactions.

INTERACTIONS
- ACE inhibitors.
- Iron supplements.

ADMINISTRATION
- Subcutaneously.
- Erythropoietin should be stored in the fridge.
- The dose will vary according to preparation and body weight.

NURSING CONSIDERATIONS
- Avoid injections containing benzyl alcohol in neonates.
- It is important that blood pressure, reticulocyte, haemoglobin and electrolyte counts be closely monitored.
- Interrupt treatment if blood pressure becomes uncontrollable.
- Exclude other causes of anaemia and give iron supplements where appropriate.
- If used before orthopaedic surgery this may present an increased risk for thrombosis.

PATIENT TEACHING
- Ensure patients know they should report any headaches, as sudden migraine-like pain is a warning of a hypertensive crisis.
- Patients who miss a dose should not try to make this up.
- Taking a single excess dose of this medication is a cause for concern and taking too high a dose over a period of time can increase the likelihood of adverse effects.

REFERENCES

Nurses should refer to manufacturer’s summary of product characteristics and to appropriate local guidelines.