Important med

Scientific name :- CETIRIZINE

Trade name :- Zyrtec

CLASSIFICATION(S):
Ther. Class: *allergy, cold and cough remedieعلاجs, antihistamines*

INDICATIONS

- Relief of allergic symptoms caused by histamine release including:
  - Seasonal and perennial allergic rhinitis
  - Chronic urticaria.

ACTION

- Antagonizes the effects of histamine at H_1-receptor sites; does not bind to or inactivate histamine
- Anticholinergic effects are minimal and sedation is dose related.
- **Therapeutic Effects:**
  - Decreased symptoms of histamine excess (sneezing, rhinorrhea, nasal and ocular pruritus, ocular tearing and redness).

Contraindicated in:

- Hypersensitivity
- Acute attacks of asthma
- Not recommended for use during lactation.

ADVERSE REACTIONS AND SIDE EFFECTS*
CNS: dizziness, drowsiness, fatigue.

NURSING IMPLICATIONS

ASSESSMENT

- Assess allergy symptoms (rhinitis, conjunctivitis,) before and periodically throughout therapy.
- Assess lung sounds and character of bronchial secretions.

IMPLEMENTATION

- **PO:** Administer once daily without regard to food.

PATIENT/FAMILY TEACHING

- Instruct patient to take medication as directed.

- May cause dizziness and drowsiness. Caution patient to avoid driving or other activities requiring alertness until response to medication is known.

THYROID PREPARATIONS

Scientific name :- levothyroxine
Trade name :- Levothroid, Levothyroxine Sodium

Scientific name :- liothyronine
Trade name :- Cytomel, l-triiodothyronine, T_3, Triostat

Scientific name :- liotrix
Trade name :- T_3/T_4, Thyrolar

Scientific name :- thyroid
Trade name :- Armour thyroid, Thyrar, Thyroid Strong, Westhroid

CLASSIFICATION(S):
hormones ,thyroid preparations

INDICATIONS

- Replacement or substitution therapy in diminished or absent thyroid function of many causes
- Treatment of some types of thyroid cancer.

ACTION

- Principal effect is increasing metabolic rate of body tissues:
- Contain T_3 (triiodothyronine) and T_4 (thyroxine) activity.
- **Therapeutic Effects:**
  - Replacement in deficiency states with restoration of normal hormonal balance

Contraindicated in:

- Hypersensitivity
- Recent MI

ADVERSE REACTIONS AND SIDE EFFECTS*
insomnia, irritability, nervousness, CARDIOVASCULAR COLLAPSE, arrhythmias, tachycardia**,** weight loss,

NURSING IMPLICATIONS

ASSESSMENT

- **General Info:** Assess apical pulse and blood pressure prior to and periodically during therapy. Assess for tachyarrhythmias and chest pain.
- **Children:** Monitor height, weight, and psychomotor development.
- ***Lab Test Considerations:*** Thyroid function studies should be monitored prior to and throughout therapy.
    - Monitor blood and urine glucose in diabetic patients. Insulin or oral hypoglycemic dose may need to be increased.
- ***Toxicity and Overdose:*** Overdose is manifested as hyperthyroidism (tachycardia, chest pain, nervousness, insomnia, diaphoresis, tremors, weight loss). Usual treatment is to withhold dose for 2–6 days. Acute overdose is treated by induction of emesis or gastric lavage, followed by activated charcoal.

IMPLEMENTATION

- **General Info:** Administer as a single dose, preferably before breakfast to prevent insomnia.

IRON SUPPLEMENTS

Scientific name :- ferrous gluconate (12% elemental iron)
Trade name :- Apo-Ferrous Gluconate, Fergon, Ferralet, Fertinic, Novoferrogluc

Scientific name :- iron dextran
Trade name :- DexFerrum, InFeD

Scientific name :- iron sucrose
Trade name :- Venofer

Scientific name :- sodium ferric gluconate complex
Trade name :- Ferrlecit

CLASSIFICATION(S):
antianemics , *iron supplements*

INDICATIONS

- **PO:** Prevention/treatment of iron-deficiency anemia
- **IM, IV:** *Iron dextran*—Treatment/prevention of iron-deficiency anemia in patients who cannot tolerate oral iron.
- *Sodium ferric gluconate complex, iron sucrose*—Treatment of iron deficiency in patients undergoing chronic hemodialysis who are concurrently receiving erythropoietin.

ACTION

- An essential mineral found in hemoglobin, myoglobin, and many enzymes
- Parenteral iron enters the bloodstream and organs of the reticuloendothelial system (liver, spleen, bone marrow), where iron is separated out and becomes part of iron stores.
- **Therapeutic Effects:**
    - Prevention/treatment of iron deficiency.

CONTRAINDICATIONS AND PRECAUTIONS

Contraindicated in:

- Hemolytic anemias and other anemias not due to iron deficiency
- Concurrent oral iron therapy

ADVERSE REACTIONS AND SIDE EFFECTS*
IM, IV—SEIZURES, dizziness, headache, syncope. hypotension, tachycardia. allergic reactions including ANAPHYLAXIS, fever
PO—constipation, dark stools, epigastric pain, GI bleeding ,staining of teeth (liquid preparations);
Local: pain at IM site (iron dextran), phlebitis at IV site, skin staining at IM site (iron dextran).

INTERACTIONS

Drug-Food:

- Iron absorption is decreased by 33–50% by concurrent administration of food.

NURSING IMPLICATIONS

ASSESSMENT

- Assess patient's nutritional status and dietary history to determine possible cause of anemia and need for patient teaching.
- Assess bowel function for constipation
- **Iron Dextran, Iron Sucrose, and Sodium Ferric Gluconate Complex:** Monitor blood pressure and heart rate frequently following IV administration until stable. Rapid infusion rate may cause hypotension and flushing.
- Assess patient for signs and symptoms of anaphylaxis (rash, pruritus, laryngeal edema, wheezing). Notify physician immediately if these occur. Keep epinephrine and resuscitation equipment close by in the event of an anaphylactic reaction.
- ***Lab Test Considerations:*** Hemoglobin, hematocrit values should be monitored prior to and every 3 wk during the first 2 mo of therapy and periodically thereafter. Serum ferritin and iron levels may also be monitored to assess effectiveness of therapy.
    - Occult blood in stools may be obscured by black coloration of iron in stool
- ***Toxicity and Overdose:*** Early symptoms of overdose include stomach pain, fever, nausea, vomiting (may contain blood), and diarrhea. Late symptoms include bluish lips, fingernails, and palms; drowsiness; weakness; tachycardia; seizures; metabolic acidosis; hepatic injury; and cardiovascular collapse. The patient may appear to recover prior to the onset of late symptoms. Therefore, hospitalization continues for 24 hr after patient becomes asymptomatic to monitor for delayed onset of shock or GI bleeding..
    - Treatment includes inducing emesis . If patient is comatose or seizing, gastric lavage with sodium bicarbonate is performed. Deferoxamine is the antidote. Additional supportive treatments to maintain fluid and electrolyte balance and correction of metabolic acidosis are also indicated.
    - If signs of overdose occur during IV administration of iron sucrose, administration at a slower rate usually relieves symptoms.

IMPLEMENTATION

- **General Info:** Oral iron preparations should be discontinued prior to parenteral administration.
- **PO:** Oral preparations are most effectively absorbed if administered 1 hr before or 2 hr after meals. If gastric irritation occurs, administer with meals. Tablets and capsules should be taken with a full glass of water or juice. Do not crush or chew enteric-coated tablets and do not open capsules.

- Liquid preparations may stain teeth. Dilute in water or fruit juice, full glass (240 ml) for adults and 1/2 glass (120 ml) for children, and administer with a straw or place drops at back of throat. Feosol elixir should be diluted in water only
- Avoid using antacids, coffee, tea, dairy products, eggs, or whole-grain breads with or within 1 hr after administration of ferrous salts. Iron absorption is decreased by 33% if iron and calcium are given with meals

- **Iron Sucrose:** Do not administer iron sucrose concurrently with oral iron, as the absorption of oral iron is reduced.
- **Intermittent Infusion:** May also be administered via infusion, into dialysis line for hemodialysis patients. May reduce risk of hypotensive episodes. Each vial must be diluted in a maximum of 100 ml of 0.9% NaCl immediately prior to infusion. Unused diluted solution should be discarded.
- ***Rate:*** Infuse at a rate of 100 mg of iron over at least 15 min.
- **Additive Incompatibility:** Do not mix iron sucrose with other medications or add to parenteral nutrition solutions for IV infusion.

PATIENT/FAMILY TEACHING

- **General Info:** Encourage patient to comply with medication regimen. If a dose is missed, take as soon as remembered within 12 hr; otherwise, return to regular dosing schedule. Do not double doses.
- Advise patient that stools may become dark green or black and that this change is harmless.
- Instruct patient to follow a diet high in iron .
- Discuss with parents the risk of children's overdosing on iron. Medication should be stored in the original childproof container and kept out of reach of children. Do not refer to vitamins as candy.
- **Iron Dextran:** Delayed reaction may occur 1–2 days after administration and last 3–4 days if IV route used, 3–7 days with IM route. Instruct patient to contact physician if fever, chills, malaise, muscle and joint aches, nausea, vomiting, dizziness, and backache occur.

Scientific name :- FOLIC ACID
Trade name :- Apo-Folic, folate, Folvite, Novofolacid, vitamin B

CLASSIFICATION(S):
antianemics, vitamins **,** *water-soluble vitamins*

INDICATIONS

- Prevention and treatment of megaloblastic and macrocytic anemias
- Given during pregnancy to promote normal fetal development.

ACTION

- Required for protein synthesis and red blood cell function. Stimulates the production of red blood cells, white blood cells, and platelets. Necessary for normal fetal development.
- **Therapeutic Effects:**
  - Restoration and maintenance of normal hematopoiesis.

Use Cautiously in:

- Undiagnosed anemias.

Contraindicated in: Hypersensitivity

ADVERSE REACTIONS AND SIDE EFFECTS

rashes. , fever.

NURSING IMPLICATIONS

ASSESSMENT

- Assess patient for signs of megaloblastic anemia (fatigue, weakness, dyspnea) before and periodically throughout therapy.
- ***Lab Test Considerations:*** Monitor plasma folic acid levels, hemoglobin, hematocrit, and reticulocyte count before and periodically during therapy.

IMPLEMENTATION

- **General Info**
  - May be given SC, deep IM, or IV when PO route is not feasible.
- **PO:** Antacids should be given at least 2 hr after folic acid
- **IV:** Solution ranges from yellow to orange-yellow in color.
- **Direct IV:** Administer at a rate of 5 mg over at least 1 min.

PATIENT/FAMILY TEACHING

- Encourage patient to comply with diet recommendations of health care professional. Explain that the best source of vitamins is a well-balanced diet with foods from the four basic food groups
- Foods high in folic acid include vegetables, fruits, and organ meats; heat destroys folic acid in foods.
- Patients self-medicating with vitamin supplements should be cautioned not to exceed RDA.
- Explain that folic acid may make urine more intensely yellow.
- Instruct patient to notify health care professional if rash occurs, which may indicate hypersensitivity.
- Emphasize the importance of follow-up exams to evaluate progress.

Scientific name :- EPO, erythropoietin

Trade name :- Epogen, Eprex (CAN)

Drug class

Recombinant human erythropoietin

Therapeutic actions

A natural glycoprotein produced in the kidneys, which stimulates red blood cell production in the bone marrow.

Indications

- Treatment of anemia associated with chronic renal failure, including patients older than 1 mo on dialysis
- Treatment of anemia related to chemotherapy in cancer patients

Contraindications and cautions

- **Contraindicated** with uncontrolled hypertension

Available forms

Injection—2,000, 3,000, 4,000, 10,000, 20,000, 40,000 units/mL

Preparation: As provided; no additional preparation. Enter vial only once; do not shake vial. Discard any unused solution. Refrigerate.

Infusion: Administer by direct IV injection or into tubing of running IV.

Adverse effects

- *Headache, ,* seizure, CVA, TIA *, Hypertension, ,* DVT*, Nausea, vomiting, diarrhea ,* Clotting of access line

■ Nursing considerations

Assessment

- History: Uncontrolled hypertension, hypersensitivity to albumin human
- BP, P; urinary output, renal function tests; CBC, Hct, iron levels, electrolytes

Interventions

* serious CV events is increased if Hgb target is higher than 12 g/dL. Use lowest levels of drug needed to increase Hgb to lowest level needed to avoid transfusion.

*DVT is higher in patients who are receiving erythropoietin-stimulating agents preoperatively to reduce need for transfusion; consider antithrombotic prophylaxis if used for this purpose.

- Patients with chronic renal failure on hemodialysis should receive the drug IV, not by subcutaneous injection, to decrease the risk of developing anti-erythropoietin antibodies.
- Gently mix; do not shake, shaking may denature the glycoprotein. Use only one dose per vial; do not reenter the vial. Discard unused portions.
- Do not give with any other drug solution.
- Administer dose three times per week. If administered independent of dialysis, administer into venous access line. If patient is not on dialysis, administer IV or subcutaneously.
- Monitor access lines for signs of clotting.
- Monitor patient for sudden loss of response and severe anemia with low reticulocyte count; withhold drug and check patient for anti-erythropoietin antibodies. If antibodies are present, discontinue drug permanently and do not switch to any other erythropoietic agent; cross-sensitivity can occur.
- Monitor Hgb levels; target range is 10–12 g/ dL; do not exceed 12 g/dL.
- Evaluate iron stores before and periodically during therapy. Supplemental iron may need to be ordered.
- Institute seizure precautions.

Teaching points

- Drug must be given three times per week and can only be given IV, subcutaneously, or into a dialysis access line. Prepare a schedule of administration dates.

Scientific name :- **LACTULOSE**

Trade name :- Cephulac, Cholac, Chronulac, Constilac, Constulose, Duphalac, Enulose, Heptalac, Lactulax, Lactulose

CLASSIFICATION(S):
laxatives , osmotics

INDICATIONS

- Treatment of chronic constipation in adults and geriatric patients
- Adjunct in the management of portal-systemic (hepatic) encephalopathy (PSE).

ACTION

- Increases water content and softens the stool
- Lowers the pH of the colon, which inhibits the diffusion of ammonia from the colon into the blood, thereby reducing blood ammonia levels.
- **Therapeutic Effects:**
  - Relief of constipation
  - Decreased blood ammonia levels with improved mental status in PSE.

PHARMACOKINETICS

Absorption: Less than 3% absorbed after oral administration.
Metabolism and Excretion: Absorbed lactulose is excreted unchanged in the urine. Unabsorbed lactulose is metabolized by colonic bacteria to lactic, acetic, and formic acids. .

Contraindicated in:

- Patients on low-galactose diets.

ADVERSE REACTIONS AND SIDE EFFECTS
cramps, distention, flatulence, diarrhea. , hyperglycemia (diabetic patients).

NURSING IMPLICATIONS

ASSESSMENT

- **General Info:** Assess patient for abdominal distention, presence of bowel sounds, and normal pattern of bowel function.
  - Assess color, consistency, and amount of stool produced.
- **PSI:** Assess mental status (orientation, level of consciousness) before and periodically throughout course of therapy.
- ***Lab Test Considerations:*** Decreases blood ammonia concentrations by 25–50%.
  - May cause increased blood glucose levels in diabetic patients.
  - Monitor serum electrolytes periodically when used chronically. May cause diarrhea with resulting hypokalemia and hypernatremia.

IMPLEMENTATION

- **General Info:** When used in hepatic encephalopathy, dosage should be adjusted until patient averages 2–3 soft bowel movements per day. During initial therapy, 30–45 ml may be given hourly to induce rapid laxation.
- **PO:** Mix with fruit juice, water, milk, or carbonated citrus beverage to improve flavor. Administer with a full glass (240 ml) of water or juice. May be administered on an empty stomach for more rapid results.
- **Rect:** To administer enema, use rectal balloon catheter. Mix 300 ml of lactulose with 700 ml of water or 0.9% NaCl. Enema should be retained for 30–60 min. If inadvertently evacuated, may repeat administration.

Scientific name :- sodium polystyrene sulfonate
Trade name :- Kayexalate, Kionex, SPS

Drug class

Potassium-removing resin

Therapeutic actions

An ion exchange resin that releases sodium ions in exchange for potassium ions as it passes along the intestine after oral administration or is retained in the colon after enema, thus reducing elevated serum potassium levels.

Indications

● Treatment of hyperkalemia

Contraindications and cautions

● Contraindicated with allergy to any component of the drug, obstructive bowel, severe hypertension, severe HF, marked edema (risk of sodium overload).

Dosages

Adults

Oral

15–60 g/day, best given as 15 g daily to qid.
May be given as suspension with water or syrup
(20–100 mL). Often given with sorbitol (artificial sweetener) to combat constipation.
May be introduced into stomach via nasogastric tube.

Enema

30–50 g every 6 hr given in appropriate vehicle and retained for 30–60 min or as long as possible.

Adverse effects

● *Constipation,* fecal impaction, *gastric irritation,, nausea, vomiting , Hypokalemia,* electrolyte
Abnormalities (particularly decrease in calcium and magnesium)

■ Nursing considerations

Assessment

● **History:** Severe hypertension, severe HF; marked edema

● **Physical:** P, BP, baseline ECG, peripheral edema; bowel sounds, abdominal examination; serum electrolytes

Interventions

● Give powder form of resin in an oral suspension with a syrup base to increase palatability استساغة.

● Monitor patient and consider use of other measures (IV calcium, sodium bicarbonate, or glucose and insulin) in cases of severe hyperkalemia, with rapid tissue breakdown: burns, renal failure.

● Monitor serum electrolytes (potassium, sodium, calcium, magnesium) regularly, and arrange to counteract disturbances.

● Arrange for treatment of constipation with 10–20 mL of 70% sorbitol every 2 hr or as needed to produce two watery stools per day. Establish a bowel training program.