

Hesi 2020 Medical-Surgical HESI Study Guide

The difference between open & closed angle glaucoma

- Chronic **open-angle glaucoma** is also known as simple adult primary glaucoma and as primary open-angle glaucoma.
Description: Condition characterized by increased intraocular pressure (IOP)
 - A. Glaucoma involves gradual, painless vision loss
 - B. Glaucoma may lead to blindness if untreated
 - C. Glaucoma is the second leading cause of blindness in the U.S.
 - D. There is an increased incidence in glaucoma in older adult populations
 - E. Glaucoma usually occurs bilaterally in those who have a family history of the condition
 - F. Aqueous fluid is inadequately drained from the eye
 - G. It is generally *asymptomatic*, especially in the early stages
 - H. It tends to be diagnosed during routine visual examinations
 - I. It cannot be cured, but can be treated with success pharmacologically and surgically

HESI HINT*

Glaucoma is often painless and symptom-free. It is usually picked up as part of a regular eye examination.

Nursing Assessment

A. Early Signs

1. Increase in IOP >22 mm Hg
2. Decreased accommodation or ability to focus

B. Late signs include:

1. Loss of peripheral vision
2. Seeing halos around lights
3. Decreased visual acuity not correctable with glasses
4. Headache or eye pain that may be so severe as to cause nausea and vomiting (**Acute closed-angle glaucoma**)

C. Risk factors include the following:

1. Family hx of glaucoma
2. Family hx of diabetes



3. Medication use and interaction of medications (e.g. glaucoma is a side effect of antihistamines, anticholinergics)

Primary Open-Angle Glaucoma: is the most common type of glaucoma. The outflow of aqueous humor is decreased in the trabecular meshwork (area of tissue in the eye located around the base of the cornea, near the ciliary body, and is responsible for draining the aqueous humor from the eye via the anterior chamber). The drainage channels become clogged like a clogged kitchen sink. Damage to the optic nerve can then result.

Primary Closed-Angle Glaucoma: is due to a reduction in outflow of aqueous humor that results from angle closure. Usually this is caused by the lens bulging forward as a result of the aging process. Angle closure may also occur as a result of pupil dilation in the patient with anatomically narrow angles. It may also occur due to drug-induced mydriasis (dilation of pupil), emotional excitement, or darkness.

HESI HINT*

Eye drops are used to cause pupil constriction because movement of the muscles to constrict the pupil also allows aqueous humor to flow out, thereby decreasing the pressure in the eye. Pilocarpine is commonly used. Caution the client that vision may be blurred for 1-2 hours after administration of Pilocarpine and that adaptation to dark environments is difficult because of pupillary constriction (the desired effect of the drug)

HESI HINT*

There is an increased incidence of glaucoma in older adult populations. Older clients are prone to problems associated with constipation. Therefore, the nurse should assess these clients for constipation and postoperative complications associated with constipation and should implement a plan of care directed at prevention of, and if necessary, treatment for constipation.

.... Constipation and straining at stool causes an increase in intraocular pressure (IOP)!

Syndrome of Inappropriate Antidiuretic Hormone(SIADH)

Rare; usually the result of an underlying condition such as Diabetes Insipidus

Results from abnormally high production/release of ADH



Characterized by **hyponatremia** and high urine specific gravity aka concentrated urine (greater 1.030).

BE ALERT FOR LOW URINE OUTPUT WITH A HIGH SPECIFIC GRAVITY* KEY ASSESSMENT**

What patient exhibits: Decreased urine output, edema, weight gain, thirst, dyspnea on exertion, fatigue, nausea, weakness, weight gain, headache confusion, irritability, coma and seizures

Treatment: fluid restriction 800-1000 mL/day; decreased Na diet (salty foods will cause pt to be thirsty so look out!)

Weigh patient daily to monitor changes in fluid balance, and the use of ice chips and sugarless gum help decrease thirst

Hyperthyroidism(Graves Disease, Goiter)

Description: Excessive activity of the thyroid gland, resulting in an elevated level of circulating thyroid hormones. Possibly long-term or lifelong treatment.

- A. Hyperthyroidism can result from a primary disease state; from the use of replacement hormone therapy; or from excess thyroid stimulating hormone (TSH) being produced by an anterior pituitary tumor.
- B. Graves disease is thought to be an autoimmune process and accounts for most cases.
- C. Diagnosis is made on the basis of serum hormone levels
- D. Common treatment for hyperthyroidism – goal is to create a euthyroid state
 - 1. Thyroid ablation by medication
 - 2. Radiation
 - 3. Thyroidectomy
 - 4. Adenectomy of portion of the anterior pituitary where TSH-producing hormone is located
- E. All treatments make the client HYPOTHYROID, requiring hormone replacement

Nursing Assessment!!!! (know symptoms)

- A. Enlarged Thyroid gland
- B. Acceleration of body processes
 - 1. Weight loss
 - 2. Increased appetite
 - 3. Diarrhea
 - 4. Heat Intolerance
 - 5. Tachycardia, palpitations, Increase BP



6. Diaphoresis, wet or moist skin
 7. Nervousness, Insomnia
 8. Fine, thin, brittle hair
- C. Exophthalmos (protruding eyeballs)
 - D. T₃ elevated above 220 ng/dL
 - E. T₄ elevated above 12 mcg/dL
 - F. Low level of TSH indicates primary disease; elevated T₄ suppresses thyroid releasing hormone (TRH), which suppresses TSH secretion. If source is anterior pituitary both will be elevated
 - G. Radioactive iodine uptake (Indicates presence of Goiter)
 - H. Thyroid scan (Indicates presence of Goiter)

HESI HINT*

Thyroid storm is a life threatening event that occurs with uncontrolled hyperthyroidism due to Graves Disease. Other causes include childbirth, CHF, diabetic ketoacidosis, pulmonary embolism, emotional distress, trauma, and surgery. Symptoms include fever, tachycardia, agitation, anxiety, and hypertension. Primary nursing interventions include maintaining and airway and adequate aeration. Propylthiouracil (PTU) and methimazole (Tapazole) are anti thyroid drugs used to treat thyroid storm. Propranolol (Inderal) may be given to decrease excessive sympathetic stimulation.

Teach the following

1. After treatment, resulting hypothyroidism will require daily hormone replacement
2. Client should wear MedicAlert jewelry in case of emergency
3. Signs of hormone replacement *underdosage* are the signs and symptoms of hypothyroidism
4. Explain to the client the recommended diet: high-calorie, high-protein, low-caffeine, low-fiber diet if diarrhea is present
5. Perform eye care for exophthalmos (artificial tears to maintain moisture, sunglasses when in bright light, annual eye examinations)

HESI HINT*

Postop thyroidectomy: Be prepared for possibility of laryngeal edema. Put a tracheostomy set at the bedside along with O₂ and a suction machine; calcium gluconate should be easily accessible.

HESI NINT*

