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Case Study, Chapter 52, Assessment and Management of Patients With Endocrine Disorders

1. Don Smart, 55 years of age presents to the family physician to follow up on some symptoms he recently developed. The patient states that he is extremely tired and is having trouble concentrating. He states that his skin is dry and flaky. His nails are brittle and his hair is dry, dull, and falls out as he showers. He is 8 weeks postop after a modified radical neck procedure for laryngeal cancer and has completed the external radiation therapy. He is using a Blom--Singer prosthesis for speech. He states that his appetite is poor, yet he is gaining weight. The patient's current medications include metformin (Glucophage) for a history of type 2 diabetes, digoxin 0.25 mg every day for a history of atrial fibrillation, and warfarin therapy being managed by the family physician for thromboembolism prophylaxis related to atrial fibrillation. The physician orders the following lab work: CBC with differential, serum albumin, TSH, FT4, PT, and INR. (Learning Objective 3)

a. What is the rationale for the labs ordered, based on the symptoms that the patient is exhibiting?
    a. CBC with differential is used to check for infection, inflammation, or immune system disorder which could be common after a major surgery and may cause his symptoms.
    b. Serum Albumin is ordered after a major surgery when the patient complains of unexplained weight changes or fatigue. Albumin is related to diseases of the liver.
    c. TSH and FT4 are used to test thyroid levels. Don's complaints of fatigue, trouble concentrating, dry skin, brittle nails, dry, thinning hair, and weight gain all align with hypothyroidism.
    d. PT and INR are used to monitor therapeutic levels of warfarin which Don is prescribed.

b. The physician follows up with the patient with the diagnosis of hypothyroidism. What are reasons why the patient developed hypothyroidism?
    a. External Radiation is known to induce hypothyroidism. A study preformed by Srikantia, et al. showed that nearly 43% of patients that underwent external radiation following a radical neck procedure suffered from hypothyroidism. This is due to the thyroid death caused by radiation.

c. Based on the results of the TSH and FT4, the physician starts the patient on levothyroxine (Synthroid) 0.025 mg/day and to have follow-

up TSH and FT4 labs and visit to the oncologist in 4 weeks. The physician informs the patient that he will continue to have lab tests and monthly follow-up until the TSH and FT4 are stable. What is the rationale for this treatment plan?

   a. The physician has placed Don on a hormone replacement therapy, that will likely need to be continued for the remainder of Don's natural life. In the care that Don's thyroid gland begins to produce the hormone again, the levothyroxine would need to be decrease, Don may also need a medication increase, based on future radiation he may receive. Monitor the patient routine is a great idea to ensure that he is receive an adequate dosage of medication.

d. What nursing interventions should the nurse provide the patient?
   a. Don will like suffer from a knowledge deficit. As a nurse, the biggest priority should be patient education on how to manage symptoms of hypothyroidism as well as how to properly take the new medication.

Resources:

Capriotti, T., & Frizzell, J. P. (2016). *Pathophysiology: introductory concepts and clinical perspectives*. Philadelphia: F.A. Davis Company.

Srikantia, N., et al. (2011, July). How common is hypothyroidism after external radiotherapy to neck in head and neck cancer patients? Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3342720/

2. Mrs. Ramirez was admitted to the hospital for wrist surgery secondary to rheumatoid arthritis. Postoperatively, she is stabilized and transferred to the general surgery unit. Mrs. Ramirez's medications include digoxin, Lasix, captopril, Synthyroid, aspirin, Protonix, and prednisone. When administering morning medications, Mrs. Ramirez refuses her aspirin and prednisone, and the nurse holds the medications. Over the next 3 days, Mrs. Ramirez continues to refuse the prednisone, and the medication is not administered. On the third postoperative day, Mrs. Ramirez becomes hypotensive, tachycardic, and has a decrease in level of consciousness. STAT labs are sent for a complete blood cell count and chemistry panel, and the physician is notified of the change in patient status. On review of the patient's record, the physician notes that Mrs. Ramirez has not received her prednisone for 4 days. Mrs. Ramirez has been on Prednisone for the past 5 years for her rheumatoid arthritis, and the physician begins to treat the patient for acute adrenal insufficiency. (Learning Objectives 7 and 9)

a. What other clinical manifestations should the nurse monitor for with suspected adrenal insufficiency?

a. The nurse should continue to monitor LOC and blood pressure. The nurse should also monitor the patient's blood glucose, as hypoglycemia is common in adrenal insufficiency. The patient may also experience nausea, vomiting, and diarrhea. The nurse may request an antiemetic. If the patient has low levels of cortisol, she may experience uncontrolled aggression.

b. The physician prescribes a STAT dose of IV hydrocortisone. What is the rationale for this medication in this situation?
    a. The adrenal glands secrete cortisol and aldosterone. The patient has been prescribed prednisone which balances the lack of these natural hormones. Suddenly removing the prednisone can cause an adrenal crisis. IV hydrocortisone is the main treatment for an adrenal crisis. Given with IV fluids, it will also correct hypotension.

Resources:

Capriotti, T., & Frizzell, J. P. (2016). *Pathophysiology: introductory concepts and clinical perspectives*. Philadelphia: F.A. Davis Company.

Lysis. (2019, December 24). What Are Normal Cortisol Levels? Retrieved from https://healthfully.com/normal-cortisol-levels-5059105.html