Adrenocortical Agents Practice Test (Sample)

Study Guide

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Questions

1. What conclusion can be inferred if a client shows elevated cortisol levels after administration of cosyntropin?

A. The client has adrenal insufficiency.

B. The client has normal adrenocortical function.

C. The client is experiencing an adrenal crisis.

D. The client's adrenal glands are underactive.

2. What is the typical action of glucocorticoids?

A. Increase cortisol production

B. Reduce inflammation

C. Enhance glucose metabolism

D. Stimulate sodium retention

3. What is primarily affected by the use of long-term steroid therapy in patients?

A. Adrenal hormone production

B. Blood glucose levels

C. Kidney function

D. Pituitary hormone levels

4. What indicates a therapeutic response to mitotane therapy?

A. The patient develops a fever.

B. The patient can lift 10 pounds when previously they could only lift 5.

C. The patient reports no changes in symptoms.

D. The patient has elevated cortisol levels.

5. Glucocorticoids should be used with caution in patients with which condition?

A. Pneumonia

B. Hepatic disease

C. Hypotension

D. Diabetes mellitus

6. Which assessment finding indicates effective therapy with ketoconazole?

A. The patient has increased urination at night

B. The patient has weight gain

C. The patient has decreased pain

D. The patient has a decreased blood glucose level

7. Which patient condition is closely monitored due to potential electrolyte imbalance during corticosteroid treatment?

A. Dehydration

B. Hypokalemia

C. Hyperglycemia

D. Hypertension

8. During patient education regarding glucocorticoid therapy, what should the nurse instruct the patient to watch for?

A. Signs of respiratory infection

B. Increased appetite

C. Changes in mood

D. All of the above

9. In response to an audible S3 during heart assessment, what should the nurse do next?

A. Continue with routine assessments.

B. Document the finding and monitor for symptoms.

C. Contact the care provider promptly.

D. Administer prescribed medication.

10. What sign indicates excessive cortisol levels in the body due to corticosteroid use?

A. Weight loss

B. Moon face

C. Hypotension

D. Increased sweating

Answers

1. B
2. B
3. A
4. B
5. D
6. D
7. B
8. D
9. C
10. B

Explanations

1. What conclusion can be inferred if a client shows elevated cortisol levels after administration of cosyntropin?

A. The client has adrenal insufficiency.

B. The client has normal adrenocortical function.

C. The client is experiencing an adrenal crisis.

D. The client's adrenal glands are underactive.

If a client demonstrates elevated cortisol levels following the administration of cosyntropin, it suggests that the client's adrenal glands are functioning normally. Cosyntropin is a synthetic form of adrenocorticotropic hormone (ACTH) that stimulates the adrenal cortex to produce cortisol. When cortisol levels increase in response to cosyntropin, this indicates that the adrenal glands are capable of responding adequately to hormonal stimulation. In cases of adrenal insufficiency, one would expect the cortisol levels to remain low or not increase significantly after cosyntropin administration, as the adrenal glands are not functioning properly to produce cortisol. Similarly, experiencing an adrenal crisis would be reflected by critical outcomes like severely low cortisol levels rather than an increase. An underactive adrenal gland would also fail to produce sufficient cortisol in response to ACTH stimulation, leading to low or unchanged levels. Thus, elevated cortisol levels post-cosyntropin administration confirm that the adrenal glands are active and responding appropriately to stimulation, indicating normal adrenocortical function.

2. What is the typical action of glucocorticoids?

A. Increase cortisol production

B. Reduce inflammation

C. Enhance glucose metabolism

D. Stimulate sodium retention

The typical action of glucocorticoids is to reduce inflammation. Glucocorticoids, such as cortisol, are steroid hormones produced by the adrenal cortex that play a crucial role in regulating various bodily functions, including the immune response. They exert their anti-inflammatory effects by inhibiting the activation of immune cells, decreasing the production of inflammatory mediators, and blocking the action of prostaglandins and leukotrienes, all of which contribute to inflammation. This anti-inflammatory property makes glucocorticoids valuable in the treatment of various conditions characterized by excessive inflammation, such as autoimmune diseases, allergic reactions, and chronic inflammatory conditions like asthma or rheumatoid arthritis. In clinical practice, their ability to rapidly alleviate symptoms of inflammation is often a primary reason for their use. While glucocorticoids do have effects on glucose metabolism and can influence sodium retention, these actions are secondary to their primary function of suppressing inflammation. Thus, the correct understanding of glucocorticoids centers on their pivotal role in managing inflammatory responses.

3. What is primarily affected by the use of long-term steroid therapy in patients?

A. Adrenal hormone production

B. Blood glucose levels

C. Kidney function

D. Pituitary hormone levels

Long-term steroid therapy primarily affects adrenal hormone production due to the feedback mechanisms involved in hormone regulation. Corticosteroids, when administered over a prolonged period, can suppress the hypothalamic-pituitary-adrenal (HPA) axis. This suppression occurs because the exogenous corticosteroids signal the body that there is sufficient cortisol present, leading to a decrease in the secretion of adrenocorticotropic hormone (ACTH) from the pituitary gland. Since ACTH is crucial for stimulating the adrenal glands to produce cortisol, this results in reduced endogenous production of adrenal hormones. Consequently, with continuous external steroid use, the adrenal glands may atrophy and produce less of their own hormones, which can lead to symptoms of adrenal insufficiency if the therapy is suddenly withdrawn. Understanding this effect is critical for clinicians managing patients on steroids, as they need to ensure proper tapering strategies to allow for recovery of natural hormone production.

4. What indicates a therapeutic response to mitotane therapy?

A. The patient develops a fever.

B. The patient can lift 10 pounds when previously they could only lift 5.

C. The patient reports no changes in symptoms.

D. The patient has elevated cortisol levels.

A therapeutic response to mitotane therapy is indicated by an improvement in the patient's functional abilities, such as being able to lift more weight than before treatment. Mitotane is primarily used to treat adrenal cancer and works by reducing the production of cortisol, which can help alleviate symptoms associated with excess cortisol production, such as those seen in Cushing's syndrome. In this context, the ability to lift 10 pounds after previously only being able to lift 5 reflects an increase in strength or physical capability, which can signify effective management of the underlying condition, potentially through reduced cortisol levels and its associated symptoms. Improvements in physical function are strong indicators that the therapy is having the desired effect on the patient's overall health status. Other options do not accurately reflect therapeutic responses. The development of a fever could indicate an adverse reaction or infection rather than a positive therapeutic outcome. Reporting no changes in symptoms suggests that there is no improvement, which would not signify an effective response to treatment. Elevated cortisol levels would indicate that mitotane is not achieving its intended effect, as the goal of the treatment is to lower cortisol levels in the body.

5. Glucocorticoids should be used with caution in patients with which condition?

A. Pneumonia

B. Hepatic disease

C. Hypotension

D. Diabetes mellitus

Glucocorticoids should be used with caution in patients with diabetes mellitus due to their impact on glucose metabolism. These agents can cause hyperglycemia by causing insulin resistance and increasing gluconeogenesis and glycogenolysis in the liver. This is particularly concerning for patients with diabetes, as it can lead to exacerbation of their condition, making it more difficult to control blood sugar levels. Therefore, careful monitoring and dose adjustments may be necessary when prescribing glucocorticoids to patients with diabetes. In regard to the other conditions listed, while there may be considerations for their management with glucocorticoids, they do not present the same level of immediate concern regarding the metabolic effects seen in diabetic patients.

6. Which assessment finding indicates effective therapy with ketoconazole?

A. The patient has increased urination at night

B. The patient has weight gain

C. The patient has decreased pain

D. The patient has a decreased blood glucose level

The correct answer, which indicates effective therapy with ketoconazole, is a decreased blood glucose level. Ketoconazole is an antifungal medication that also has effects on adrenal function. It can inhibit steroidogenesis, which leads to a reduction in cortisol production. This is particularly important in conditions like Cushing's syndrome, where excess cortisol can lead to elevated blood glucose levels. Therefore, a decrease in blood glucose level can reflect a positive response to treatment, as it suggests that the management of cortisol has improved the patient's condition. The other findings would not be indicative of effective therapy with ketoconazole. Increased urination at night might suggest a different underlying condition that is not necessarily addressed by the drug. Weight gain could be associated with excessive cortisol levels and may not reflect a treatment response. Decreased pain is a non-specific outcome that does not directly correlate with the pharmacological effects of ketoconazole on cortisol levels.

7. Which patient condition is closely monitored due to potential electrolyte imbalance during corticosteroid treatment?

A. Dehydration

B. Hypokalemia

C. Hyperglycemia

D. Hypertension

The condition that is closely monitored due to potential electrolyte imbalance during corticosteroid treatment is hypokalemia. Corticosteroids can lead to increased sodium retention and potassium loss through the kidneys, which may result in lower levels of potassium in the bloodstream (hypokalemia). This is particularly relevant in patients who are on long-term corticosteroid therapy or high doses, as they are at greater risk for developing this electrolyte imbalance. Monitoring potassium levels is essential because hypokalemia can lead to serious complications, including cardiac arrhythmias and muscle weakness. While dehydration, hyperglycemia, and hypertension are important considerations in patients receiving corticosteroids, they are not specifically tied to the direct risk of electrolyte imbalances like hypokalemia is. Dehydration may occur due to other factors, hyperglycemia often results from the metabolic effects of corticosteroids on glucose metabolism, and hypertension could develop through mechanisms unrelated to electrolyte disturbances. Thus, regular monitoring of potassium levels is critical in the context of corticosteroid treatment to prevent hypokalemia and its associated risks.

8. During patient education regarding glucocorticoid therapy, what should the nurse instruct the patient to watch for?

A. Signs of respiratory infection

B. Increased appetite

C. Changes in mood

D. All of the above

Instructing the patient to watch for signs of respiratory infection, increased appetite, and changes in mood is essential during glucocorticoid therapy due to the multifaceted effects these medications can have on the body. Glucocorticoids can suppress the immune system, making patients more susceptible to infections, including respiratory infections. Therefore, recognizing early signs of any infection is crucial for timely medical intervention. Additionally, these agents can induce changes in appetite, often leading to increased hunger, which may result in weight gain if not monitored. This side effect is important for patients to be aware of as it can affect their nutritional status and overall health. Changes in mood, including feelings of euphoria or depression, can occur with glucocorticoid therapy, making it necessary for patients to be alert to these psychological effects. Mood changes can significantly impact a patient's well-being and compliance with treatment, so monitoring these symptoms is vital. By encompassing all these potential adverse effects, the nurse provides comprehensive education that empowers the patient to actively participate in their care and report any concerning signs promptly. Therefore, the correct response highlights the importance of awareness regarding the wide range of effects glucocorticoids can have.

9. In response to an audible S3 during heart assessment, what should the nurse do next?

A. Continue with routine assessments.

B. Document the finding and monitor for symptoms.

C. Contact the care provider promptly.

D. Administer prescribed medication.

An audible S3 heart sound, often referred to as a "ventricular gallop," can indicate underlying cardiac issues such as heart failure or volume overload. This finding may suggest that the heart is experiencing difficulty in accommodating normal blood volume, signaling a potential deterioration in cardiac function. Given the significance of an audible S3, it is crucial for the nurse to act promptly to ensure patient safety and provide appropriate care. By contacting the care provider promptly, the nurse facilitates timely evaluation and management of the patient's condition, which is essential for addressing any acute issues that may arise from the presence of this heart sound. Routine assessments or simply monitoring the finding without intervention could lead to delayed care. Documenting the finding is important, but it should be accompanied by appropriate action, especially when considering the patient's potential for rapid decline in the context of heart conditions. Administering prescribed medication may be appropriate depending on the situation, but it is not the immediate action after detecting an audible S3 without assessment as directed by a healthcare provider. Therefore, the most clinically sound course of action involves notifying the care provider for further evaluation and instruction.

10. What sign indicates excessive cortisol levels in the body due to corticosteroid use?

A. Weight loss

B. Moon face

C. Hypotension

D. Increased sweating

The presence of a "moon face" is a characteristic sign of excessive cortisol levels in the body, particularly due to corticosteroid use. This condition results from fat redistribution and an increase in adipose tissue in the facial area, leading to a rounded, swollen appearance of the face. It is commonly associated with Cushing's syndrome, which can occur as a result of prolonged corticosteroid therapy or hypercortisolism. In this scenario, the other signs provided do not directly relate to the excess cortisol effects as clearly as moon face does. Weight loss, for example, is not typically associated with high cortisol levels; rather, Cushing's syndrome often leads to weight gain, particularly around the abdomen and face. Hypotension and increased sweating are also not hallmark signs of corticosteroid excess; in fact, corticosteroids can often lead to hypertension rather than hypotension. Therefore, the round, full appearance of the face is the key indicator for high cortisol levels due to corticosteroid use, making it the correct choice.