



Neuro Quiz 21

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Quiz Team

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1. Which of the following are due to endocrine hypo-secretion secondary to pituitary disease?

- A. Addison's disease
- B. Graves disease
- C. Diabetes Insipidus
- D. Galactorrhea

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1 A. Addison's disease

INCORRECT
TRY AGAIN

- × Addison's disease
 - × A primary adrenocortical insufficiency
 - × Causes: auto-immune, infection, hemorrhage, or malignancy
- × Adrenocortical insufficiency secondary to pituitary disease (low ACTH)
 - × Low glucocorticoids
 - × Renin-angiotensin-aldosterone axis is preserved, and fluid and electrolyte disturbance is less severe

1 B. Graves disease

INCORRECT
TRY AGAIN

✗ Graves disease is an autoimmune disorder leading to overactive thyroid (hyperthyroidism) and not 'hypo-secretion'

1 C. Diabetes insipidus



- ✗ Diabetes Insipidus (DI) results due to failure of Anti-Diuretic Hormone secretion
- ✗ ADH or Vasopressin is a peptide hormone that increases water permeability of the kidney's collecting duct and distal convoluted tubule by inducing translocation of aquaporin, water channels in the plasma membrane of collecting duct cells
- ✗ Desmopressin, a synthetic analogue of ADH, longer half-life and lacking the vasoconstrictor action, is used to treat DI

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1 D. Galactorrhea

INCORRECT
TRY AGAIN

- ✗ Hyper-prolactinemia causes galactorrhea and menstrual dysfunction in women and hypogonadism, reduced libido and erectile dysfunction in men
- ✗ Treatment of hyper-prolactinemia is dopamine agonists, such as bromocriptine & cabergoline

2. Which of the following combinations of endocrinal dysfunction and medical management are INCORRECT?

- A. Acromegaly – Octreotide
- B. Cushing's disease – Ketoconazole
- C. Prolactinoma – Cabergoline
- D. Thyrotropinoma – L-iodothyronine

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2 A. Acromegaly - Octreotide

INCORRECT
TRY AGAIN

- ✗ Although, surgical excision of pituitary adenoma is the primary treatment recommended, acceptable pharmacological therapy for acromegaly, include
 - ✗ Suppression of GH secretion
 - ✗ Somatostatin analogues- Octreotide
 - ✗ Dopamine analogues – Bromocriptine, Cabergoline
 - ✗ Block GH action
 - ✗ GH receptor antagonists - Pegvisomant

2 B. Cushing's disease - Ketoconazole

INCORRECT
TRY AGAIN

Management of Cushing's disease include

- × Surgical excision of pituitary or adrenal tumor if present
- × Control cortisol production in adrenal
 - × Ketoconazole, Metyrapone
- × Block cortisol effect on tissues
 - × Mifepristone
- × Decrease ACTH production from the pituitary
 - × Pasireotide

2 C. Prolactinoma - Cabergoline

INCORRECT
TRY AGAIN

- ✗ The first line of treatment for prolactinomas is dopamine agonists like cabergoline and bromocriptine
- ✗ Surgery is indicated only if medical therapy fails or is not tolerated

2 D. Thyrotropinoma – L-iodothyronine



- × Pituitary tumor secreting TSH will cause increased production of tri-iodo-thyronine (T3) and T4 from the thyroid gland, causing hyperthyroidism
- × Management of thyrotropinoma are
 - × Surgery – excision of pituitary tumor
 - × Anti-thyroid drugs – block production of T3, T4
 - × Methimazole
 - × Propylthiouracil
 - × Beta-blockers

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3. Anesthetic implications of Acromegaly include all, EXCEPT

- A. Upper airway obstruction
- B. Hypertension
- C. Cardiomyopathy
- D. Reactive airway disease

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3 A. Upper airway obstruction

INCORRECT
TRY AGAIN

- ✗ The combination of macroglossia, macroglossia, and enlargement of the upper airway soft tissue can contribute to upper airway obstruction
- ✗ Up to 70% of acromegalic have obstructive sleep apnea
- ✗ Large size equipment would be required for airway management

3 B. Hypertension

INCORRECT
TRY AGAIN

- ✗ Patients with acromegaly may have refractory hypertension with eccentric left ventricular hypertrophy

3 C. Cardiomyopathy



INCORRECT
TRY AGAIN

- ✗ Patients with acromegaly may have ischemic heart disease, arrhythmias, heart block, cardiomyopathy, and bi-ventricular dysfunction
- ✗ Preoperative echocardiography is useful to assess left ventricular size and function

3 D. Reactive airway disease



- ✗ Along with a high incidence of obstructive sleep apnea, the respiratory function may be additionally compromised by kyphoscoliosis and proximal myopathy, resulting in a restrictive respiratory pathology.
- ✗ Reactive airway disease is not a feature of acromegaly

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4. Anesthetic implications of Cushing's disease include all, EXCEPT

- A. Systemic hypertension
- B. Obstructive sleep apnea
- C. Glucose intolerance
- D. Increased sensitivity to succinylcholine

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4 A. Systemic hypertension

INCORRECT
TRY AGAIN

- ✗ More than 80% of patients with Cushing's disease have systemic hypertension, and may be refractory to usual treatment
- ✗ Eccentric left ventricular hypertrophy and diastolic dysfunction is seen in patients with long-standing disease

4 B. Obstructive sleep apnea

INCORRECT
TRY AGAIN

- ✗ With truncal obesity, soft tissue fat deposition, 'moon facies', and 'buffalo hump', these patients have a high incidence of obstructive sleep apnea

4 C. Glucose intolerance

INCORRECT
TRY AGAIN

- ✗ Impaired glucose tolerance is seen in almost two-thirds of patients with Cushing's disease, half of whom have diabetes

4 D. Increased sensitivity to succinylcholine



- ✗ Cushing's disease is associated with myopathy and proximal muscle weakness, however, a change in susceptibility to depolarizing or non-depolarizing muscle relaxants has not been documented

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5. Which of the following statements about use of a Lumbar Intrathecal catheter during transphenoidal pituitary surgery is FALSE?

- A. Can be used to assist visualization of the tumor by injecting air
- B. Injection of saline through the catheter can aid to 'push' the tumor into the surgical field
- C. Can be used postoperatively to reduce inadvertent CSF rhinorrhea
- D. Can be used to administer antibiotics for postoperative meningitis

5 A. Can be used to assist visualization of the tumor by injecting air

INCORRECT
TRY AGAIN

- ✗ Small amount of air injected through the intrathecal catheter can delineate the dural layer around the sella turcica during fluoroscopy.
- ✗ This was used to assist the surgical approach

5 B. Injection of saline through the catheter can aid to 'push' the tumor into the surgical field

INCORRECT
TRY AGAIN

- ✗ During anesthesia, the brain tissue would recede into the cranium due to the lowered intracranial pressure
- ✗ An aliquot of saline injected through the intrathecal catheter would transiently raise the ICP and 'push' the brain and the pituitary tumor, into the surgical field

5 C. Can be used postoperatively to reduce inadvertent CSF rhinorrhea

INCORRECT
TRY AGAIN

- ✗ One of the complications of trans-sphenoidal pituitary surgery is CSF rhinorrhea
- ✗ Draining the CSF through the intrathecal catheter, helps lower the CSF pressure and thus the rhinorrhea, aiding in the early healing of the dural tear

5 D. Can be used to administer antibiotics for postoperative meningitis



- ✗ In the unfortunate event of a patient developing meningitis in the postoperative period, the intrathecal catheter is removed so as to remove the possible source of infection
- ✗ Systemic antibiotics is used to manage meningitis following trans-sphenoid surgery



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References

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