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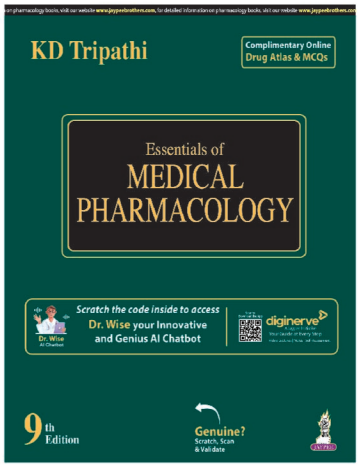

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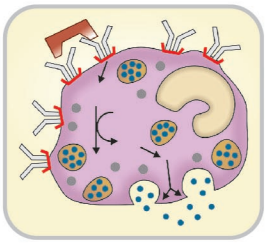

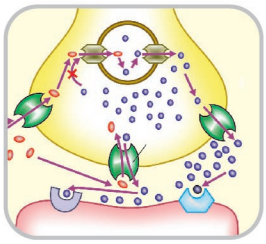

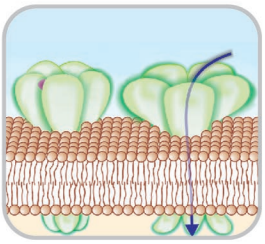

6th Edition

KD Tripathi

JAYPEE

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21. CORTICOSTEROIDS

1. **A 60-year-old patient with newly diagnosed hypertension and hypokalemia is being evaluated for potential mineralocorticoid excess. Which of the following hormones is primarily responsible for regulating sodium reabsorption and potassium excretion, and is considered the principal mineralocorticoid?**
   a. Cortisol
   b. Prednisolone
   c. Aldosterone
   d. Hydrocortisone

2. **A 47-year-old female patient presents with clinical signs of Cushing's syndrome. Laboratory tests show elevated cortisol and ACTH levels. To differentiate between Cushing's disease and ectopic ACTH syndrome, you decide to conduct a CRH stimulation test. Which of the following CRH preparations is used to distinguish between a pituitary source of ACTH and an ectopic source?**
   a. Prednisolone
   b. Corticorelin
   c. Dexamethasone
   d. Metyrapone

3. **A 10-year-old child with asthma is using inhaled corticosteroids for management. The parent is concerned about possible adverse effects associated with this treatment. Which of the following is NOT a recognized adverse effect of inhaled corticosteroids?**
   a. Dysphonia
   b. Oropharyngeal candidiasis
   c. Increased risk of tuberculosis
   d. Growth suppression

4. **A 54-year-old patient with chronic asthma is being considered for long-term management. The physician aims to prescribe a glucocorticoid that has a long duration of action to effectively control inflammation and symptoms over time. Which of the following medications would be appropriate for long-acting glucocorticoid therapy?**
   a. Hydrocortisone
   b. Prednisone
   c. Methylprednisolone
   d. Dexamethasone

5. **A 45-year-old patient presents with acute adrenal insufficiency and requires immediate emergency treatment. The healthcare provider opts to use hydrocortisone for its efficacy in managing this critical condition. What is the appropriate dosing regimen of hydrocortisone for emergency treatment of acute adrenal insufficiency?**
   a. 20 mg orally in the morning + 10 mg in the afternoon
   b. 100 mg IV bolus followed by 100 mg IV every 8 hours
   c. 10 mg orally every 8 hours
   d. 50 mg IV bolus followed by 50 mg IV every 12 hours

6. **A 30-year-old pregnant woman at 28 weeks of gestation is showing definitive signs of premature labor. The physician decides to administer antenatal glucocorticoids to reduce the risk of neonatal complications. Which of the following glucocorticoid regimens is NOT recommended for antenatal use in this scenario?**
   a. Betamethasone 12 mg IM every 24 hours for 2 doses
   b. Dexamethasone 6 mg IM every 12 hours for 4 doses
   c. Prednisone 20 mg orally every 8 hours for 3 days
   d. Betamethasone 12 mg IM every 24 hours for 2 doses, with a second course if necessary

7. **A pregnant woman at 27 weeks of gestation is experiencing preterm labor and is considered for glucocorticoid therapy to improve neonatal outcomes. Which of the following statements about antenatal glucocorticoid therapy is incorrect?**
   a. A second course of glucocorticoids may be administered if preterm labor persists after 7 days
   b. Antenatal glucocorticoids are administered to reduce the risk of respiratory distress syndrome and neonatal death
   c. Dexamethasone is given as a single dose of 2 mg IM
   d. Both betamethasone and dexamethasone are effective in decreasing neonatal morbidity associated with premature birth

1 c 2 b 3 c 4 d 5 b 6 c 7 c

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8. Among the following compounds, which one exhibits the least mineralocorticoid activity?
a. Prednisolone
b. Methylprednisolone
c. Deflazacort
d. Desoxycorticosterone acetate

9. Among the following compounds, which one exhibits the least glucocorticoid activity?
a. Dexamethasone
b. Betamethasone
c. Triamcinolone
d. Hydrocortisone

10. Which of the following steroids has a half-life of <12 hours?
a. Prednisolone
b. Triamcinolone
c. Dexamethasone
d. Hydrocortisone

11. A 2-year-old child presents to the emergency department with ambiguous genitalia, lethargy, and vomiting. Blood tests reveal serum potassium of 6.8 mEq/L, serum sodium of 116 mEq/L, and low blood pressure. Which therapy is the most appropriate for this patient?
a. Triamcinolone acetonide
b. Budesonide
c. Hydrocortisone
d. Dexamethasone

12. A 1-year-old child diagnosed with classical congenital adrenal hyperplasia presents with signs of salt wasting, including dehydration, low blood pressure, and hyperkalemia. What is the most appropriate treatment regimen for this patient?
a. Hydrocortisone and fludrocortisone
b. Prednisone
c. Ketoconazole
d. Dexamethasone and potassium supplements

13. A 40-year-old patient with a history of Addison's disease presents to the emergency department in an acute adrenal crisis. The patient is hypotensive, lethargic, and has low serum cortisol levels. What is the drug of choice for managing acute adrenal insufficiency?
a. IV betamethasone
b. Oral prednisone
c. IV hydrocortisone
d. IV dexamethasone

14. A 40-year-old patient has been diagnosed with chronic adrenal insufficiency and is initiating hormone replacement therapy. The healthcare provider is selecting the most appropriate glucocorticoid for long-term management of this condition. Which of the following is the most appropriate drug for chronic adrenal insufficiency replacement therapy?
a. Corticorelin
b. Metyrapone
c. Hydrocortisone
d. Beclomethasone

15. A60-year-old patient with chronic health conditions is being evaluated for corticosteroid therapy to treat severe inflammation. The healthcare provider is reviewing the patient's medical history to identify any contraindications to corticosteroid use. Which of the following conditions is NOT a contraindication for corticosteroid therapy?
a. Viral and fungal infections
b. Diabetes mellitus
c. Hypertension
d. Eczematous skin disease

16. A 50-year-old patient receiving high-dose glucocorticoid therapy for a few weeks develops sudden pain and stiffness in the hip. The healthcare provider is concerned about a known complication of glucocorticoid use. Which of the following complications is most likely in this patient?
a. Osteoarthritis of the hip
b. Osteonecrosis of the femoral head
c. Septic arthritis
d. Tendonitis

17. A 45-year-old patient who has been on high-dose glucocorticoids for a short period of time presents with sudden onset of hip pain. Imaging reveals damage to the femoral head, and the healthcare provider suspects a complication associated with glucocorticoid therapy. What is the most likely complication in this patient?
a. Osteonecrosis
b. Osteomyelitis
c. Bursitis
d. Stress fracture

8 c 9 d 10 d 11 c 12 a 13 c 14 c 15 d 16 b 17 a

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18. A 50-year-old patient on long-term glucocorticoid therapy develops sudden hip pain and stiffness. The healthcare provider is concerned about osteonecrosis, a known complication of glucocorticoid use. Which of the following statements about osteonecrosis is false?
a. The femoral head is the most commonly affected site in glucocorticoid-induced osteonecrosis
b. Osteonecrosis typically occurs only after long-term use of glucocorticoids
c. Early symptoms of osteonecrosis include joint pain and stiffness
d. Osteonecrosis generally progresses, and most affected patients ultimately require joint replacement

19. A 50-year-old patient with severe hypercortisolism requires rapid control of cortisol levels for short-term management. The physician considers using etomidate off-label for this purpose. Which of the following statements about etomidate's use in controlling hypercortisolism is true?
a. Etomidate is a short-acting anesthetic that inhibits CYP11B1, decreasing cortisol production
b. Etomidate is administered orally to inhibit cortisol production
c. Etomidate is administered intramuscularly to manage hypercortisolism
d. Etomidate increases cortisol production by enhancing CYP11B1 activity

20. A 58-year-old patient with inoperable adrenocortical carcinoma is being considered for medical management to reduce cortisol levels as an alternative to surgical adrenalectomy. The physician is evaluating which drug is most suitable for this purpose. Which of the following drugs is most appropriate for medical adrenalectomy in this patient?
a. Mitotane
b. Mifepristone
c. Etomidate
d. Ketoconazole

21. The Na^+ retaining action of aldosterone is exerted on the:
a. Proximal convoluted tubule
b. Ascending limb of loop of Henle
c. Cortical diluting segment
d. Distal convoluted tubule

22. The mechanism by which glucocorticoids reduce inflammation is:
a. Decrease lipocortin
b. Increase IL-2
c. Increase lipocortin
d. Increase CRP
e. Increase LTs

23. Aldosterone enhances Na^+ reabsorption in renal tubules by:
a. Stimulating carbonic anhydrase
b. Activating Na^+ K^+ ATPase
c. Inducing the synthesis of Na^+ K^+ ATPase
d. Inducing renal prostaglandin synthesis

24. Parathormone receptors are expressed on the surface of:
a. Osteoblasts
b. Osteoclasts
c. Gut mucosal cell
d. All of the above

25. Hydrocortisone exerts the following actions:
a. Increases both K^+ and Ca^{2+} excretion
b. Decreases both K^+ and Ca^{2+} excretion
c. Decreases K^+ but increases Ca^{2+} excretion
d. Increases K^+ but decreases Ca^{2+} excretion

26. Adverse consequences of excess mineralocorticoid action include the following, *except*:
a. Na^+ and water retention
b. Acidosis
c. Aggravation of CHF associated myocardial fibrosis
d. Rise in blood pressure

27. Glucocorticoids impair carbohydrate tolerance by:
a. Promoting gluconeogenesis in liver
b. Depressing glucose uptake into skeletal muscles
c. Inhibiting insulin secretion
d. Both a and b are correct

28. Corticosteroids exert anti-inflammatory action by inhibiting the following enzyme:
a. Cyclo-oxygenase
b. Lipoxygenase
c. Phospholipase A
d. Phosphodiesterase

18 b 19 a 20 a 21 d 22 c 23 c 24 a 25 a 26 b 27 d 28 c

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29. The false statement about corticosteroids is:
a. Inhibit the release of arachidonic acid from vessel wall through action on phospholipase A
b. Binds to the plasma membrane receptors and following internalization influence nuclear changes
c. Inhibit vascular membrane permeability
d. Increase glucose synthesis in liver

30. Hydrocortisone induces the synthesis of the following protein which in turn inhibits the enzyme phospholipase A2:
a. Heat shock protein 90
b. Inhibin
c. Transcortin
d. Lipocortin

31. The glucocorticoid receptor is located:
a. On the outer surface of the cell membrane
b. On the inner surface of the cell membrane
c. In the cytoplasm
d. Inside the nucleus

32. The most important mechanism of anti-inflammatory action of glucocorticoids is:
a. Inhibition of lysosomal enzymes
b. Restriction of recruitment of inflammatory cells at the site of inflammation
c. Antagonism of action of interleukins
d. Suppression of complement function

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29 b 30 d 31 c 32 b

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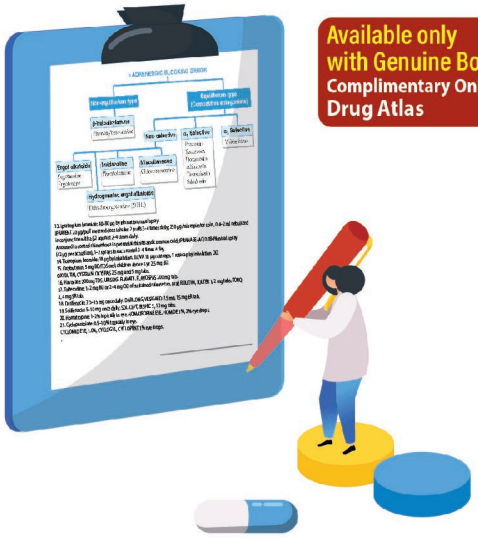

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