

The logo of Galgotias University is a circular emblem with a stylized 'G' shape in the center. The 'G' is composed of several curved, overlapping bands in shades of yellow, orange, and blue. The background of the emblem is a light, textured grey.

ACTH and Corticosteroids

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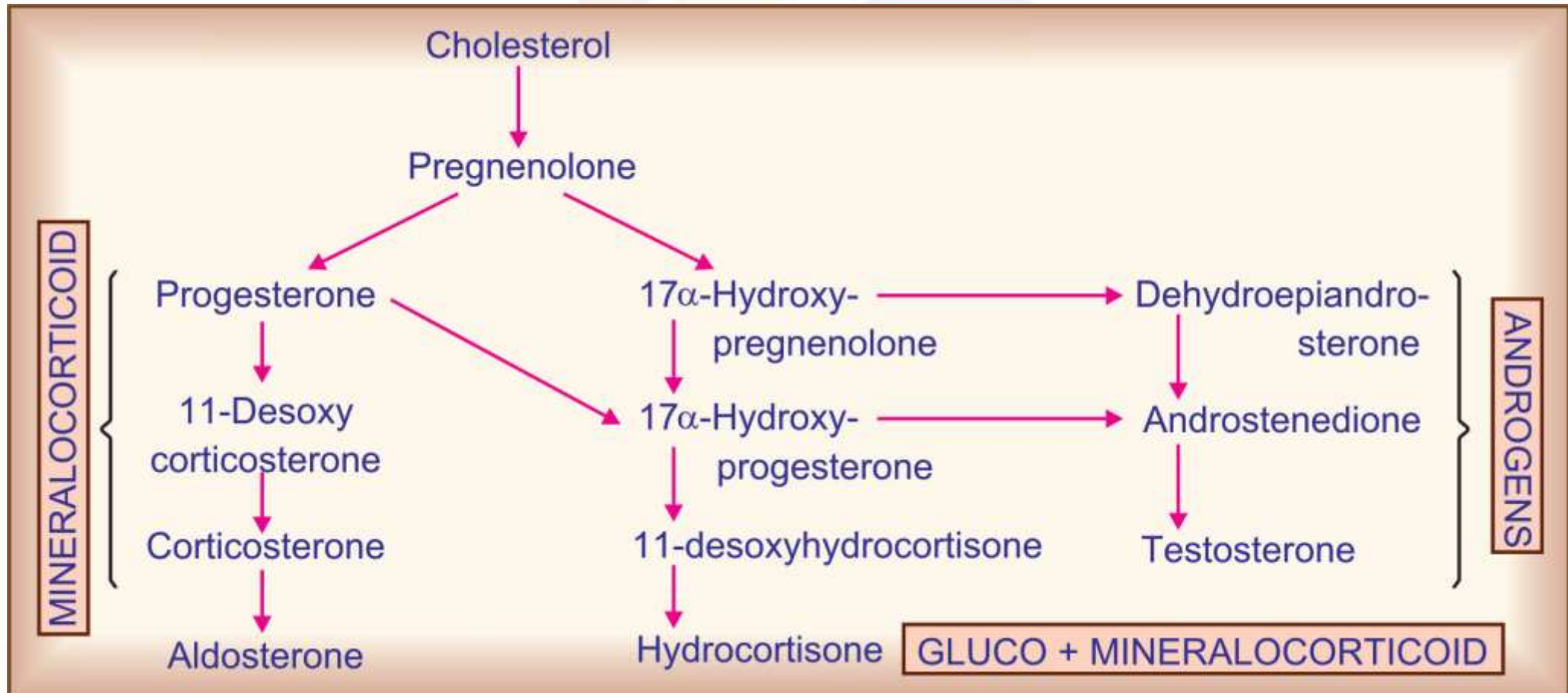
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Corticosteroids

The adrenal cortex secretes steroidal hormones which have glucocorticoid, mineralocorticoid and weakly androgenic activities.

The term 'corticosteroid' or 'corticoid' includes natural gluco- and mineralo-corticoids and their synthetic analogues.

Biosynthesis



Actions:

- Maintain fluid-electrolyte
- Energy substrate homeostasis
- Functional status of skeletal muscles and nervous system
- Management of stress

Actions of corticoids are divided into:

Glucocorticoid- Effects on carbohydrate, protein and fat metabolism

Mineralocorticoid- Effects on Na⁺, K⁺ and fluid balance

Pharmacological actions of glucocorticoids:

- Carbohydrate and protein metabolism
- Fat metabolism
- Calcium metabolism
- Water excretion
- cutaneous vasoconstriction
- Skeletal muscles tone
- Inflammatory responses
- Immunological and allergic responses

Pharmacokinetics

- All natural and synthetic corticoids, except DOCA are absorbed and are effective by the oral route.
- Hydrocortisone undergoes high first pass metabolism, has low oral: parenteral activity ratio
- The corticosteroids are metabolized primarily by hepatic microsomal enzymes
- The plasma $t_{1/2}$ of hydrocortisone is 1.5 hours.

Adverse effects:

Mineralocorticoid:

- Sodium and water retention, edema, hypokalaemic alkalosis and a progressive rise in BP.

Glucocorticoid:

Cushing's habitus

Fragile skin

Hyperglycaemia

Muscular weakness

Uses:

- Replacement therapy
- Rheumatoid arthritis
- Severe allergic reactions
- Autoimmune diseases
- Bronchial asthma
- Collagen diseases
- Malignancies
- Skin diseases
- Organ transplantation and skin allograft



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