**№1 for Abouabdalla Mahmoud Saad Abdalla Ali**

A 25-year old female sought treatment for her constant fatigue, lethargy, and depression. She was small in stature and had previously been diagnosed with attention-deficit disorder. On physical examination she was found to have an enlarged thyroid gland (goiter). Blood tests revealed elevated levels of T3, T4, and TSH.

1. What diagnosis can be made to the patient based on the results of the examination?

2. Why levels of T3, T4 and TSH elevated?

3. What is the mechanism underlying the development of these symptoms (constant fatigue, lethargy, goiter)?

**№2 for Delshad Farid Faroh**

A 7-year-old child who was very small for his age began receiving treatment with growth hormone.

1. What substances regulate the synthesis and secretion of this hormone?

2.Which metabolic alterations is most likely to be observed after beginning this treatment? What disease can develop as a result of treatment?

3. Can adults get growth hormone treatment? Why?

**№3** **for Purtaheri Mahla Ali**

A 26-year-old male presents complaining of heat intolerance, heavy sweating, tremulousness, and feeling “jittery inside.” Physical examination reveals reddened conjunctiva and warm and moist palms, but the thyroid gland was not visibly enlarged.

1. Which test would be most helpful to obtain an accurate diagnosis?

2. What is the biochemical mechanism for this disorder?

3. What functions does this hormone perform normally?

**№4 for Al-ahmar Adnan Othman Ahmed Ali**

39-year-old female presents to the clinic for a routine health maintenance exam. On further questioning she reports having diarrhea and has been losing weight. She has also noticed a change in hair and fingernail growth and frequently feels warm while others are cold or comfortable. On examination, her heart rate is 110 beats per minute. She has a slight tremor and has increased reflexes in all extremities. A nontender thyroid enlargement is appreciated in the thyroid region. Her TSH level is low. The patient is told that she has an autoimmune antibody process.

1. What is the most likely diagnosis?

2. What is the biochemical mechanism for this disorder?

3. What type of receptors bind to these hormones? Draw a diagram of the action of these hormones on the target cell through the receptors.

**№5 for Elgamal Ithar Mohamed Yussef Ali**

A 32-year-old woman presents to her obstetrician/gynecologist with complaints of irregular periods, hirsutism, and mood swings. She also reports weight gain and easy bruising. On examination, she is found to have truncal obesity, a round “moon” face, hypertension, ecchymoses, and abdominal striae. The patient is given a dexamethasone suppression test which reveals an elevated level of cortisol.

1. What is the likely diagnosis?

2. What would an elevated adrenocorticotropic hormone (ACTH) level indicate?

3. Draw a diagram of the action of steroid hormones on the target cell through the receptors.

**№6 for Rabi Moamen Elsaed Hassan Yossef**

A 65-year-old female presents to the clinic feeling tired and fatigued all the time. She is frequently cold when others are hot. Her skin has become dry, and she has noticed a swelling sensation in her neck area. On examination she is afebrile with a pulse of 60 beats per minute. She is in no acute distress and appears in good health. She has an enlarged, nontender thyroid noted on her neck. Her reflexes are diminished, and her skin is dry to the touch.

1. What is the most likely diagnosis?

2. What laboratory test would you need to confirm the diagnosis?

3. What functions do thyroid hormones perform normally?

**№7 for Alsavi Omar Haled Abdelmavla**

A patient, 42 years old, took glucocorticoids in relation with rheumatoid arthritis. In 3 weeks the signs of arthritis were almost eliminated and the patient stopped taking him drugs. But a day after there was a relapse, and the new attack was significantly more severe than at the beginning of the disease.

1. What's the reason of the developed complication?
2. What type of receptors bind to these hormones? Draw a diagram of the action of glucocorticoids on the target cell through the receptors.
3. Why are glucocorticoids used to treat inflammation?

**№8 for Fahmi Abdelrahman Mohamed Talaat**

The patient suffering from diabetes mellitus complained of flaccidity, apathy, difficulty of respiration. Investigation of the patient revealed: confused consciousness, paleness and dryness of the skin and mucous membranes, sunken eyes, sharp pointed features of the face. The blood pressure is 100/60 mmHg. Pulse is weak and frequent. Odour of acetone from the mouth. The diagnosis of hyperglycemic coma was given.

1. Which drug should be introduced for the elimination of the given state?
2. Explain the appearance of the acetone odor in his breath.
3. What is the biochemical mechanism of hyperglycemic coma?

**№9 for Refaey Ahmed Mohamed Moustafa**

To the patient, suffering from diabetes mellitus the nurse has wrongly introduced almost double dose of insulin. In 2 hours sweating, tachycardia, convulsions and loss of consciousness has developed. Hypoglycemic coma is diagnosed.

1. What drug should be introduced to the patient?
2. Does blood glucose rise faster after administration of glucagon or glucocorticosteroids? Why?
3. What is the mechanism underlying the development of these symptoms (tachycardia, convulsions and loss of consciousness)?

**№10 for Asma Mahamat Tahir Abakar**

A man has heart palpitations, intense sweating, and headache. The examination revealed hypertension, hyperglycemia, increased basal metabolic rate, and tachycardia.

1. Which pathology of adrenal glands can be associated with such changes?
2. What is the mechanism underlying the development of these symptoms (hypertension, hyperglycemia, increased basal metabolic rate, and tachycardia)?
3. Write the target cells of the hormone, the level of which is elevated in this disease.

**№11 for Farzanegan Farzan Farzad**

Glucocorticoid agent (Prednisolone) had been administered to the patient of 42 years who suffered from rheumatoid arthritis, in 3 weeks patient’s state had improved and he had discontinued taking of the drug. However in a day his condition was worsened.

1. What was the reason of this complication?
2. Why are glucocorticoids used to treat inflammation?
3. Will the patient's condition improve after administration of corticotropin?

**№12 for Salem Ahmed Imad Abdellatif Mohamed**

The patient of advanced age addressed to the doctor with complaints of dryness in a mouth, polyuria, weight loss. At examination hyperglycemia and glycosuria are revealed. It is diagnosed: diabetes mellitus, II type (non insulin dependent), an intermediate degree of gravity.

1. What is the most likely causes of diabetes mellitus, II type?

2. What is the biochemical basis of this disease?

3. Explain why the patient developed such symptoms?

**№13 for Babaicheshmehmaki Armin Sadollah**

A 19-year-old female suffers from tachycardia in resting condition, weight loss, excessive sweating, exophthalmos and irritability.

1. What hormone would you expect to find elevated in her serum?
2. What functions does this hormone perform normally?
3. Draw a diagram of the action of steroid hormones on the target cell through the receptors.

**№14 for Mohamed Hossam Mostafa Kamal**

A patient with severe inflammatory disease had been treated by prednisolone during 10 months. Due to improvement of patients state the doctor has reduced a dose of prednisolone and added corticotropin.

1. What purpose has he pursued, administering corticotropin?
2. What functions does this hormone perform normally?
3. Draw a diagram of the action of steroid hormones on the target cell through the receptors.

**№15 for Zamani Mohammadamir Ashraf**

Hypoglycemic state arose in the patient who had been suffering from diabetes mellitus and was treated with insulin's drug of prolonged action.

1. Indicate the endocrine drug which should be introduce to eliminate this plate.
2. What functions does this hormone perform normally?
3. Draw a diagram of the action of steroid hormones on the target cell through the receptors.