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Diploma in Pharmacy 2nd Year
Biochemistry & Clinical Pathology
Important Questions
Chapter 12 : Organ Function Test

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Chapter 12
Organ Function Test
IMPORTANT Questions

Q1. Write the function of kidney.

Ans.

Function of kidney

- **Regulation of blood volume :** They regulate blood volume by conserving the water or by excreting water in urine.
- **Regulation of blood pressure:** They regulate BP by regulating Blood volume.
- **Regulation of renin enzyme :** Renin is an enzyme which is produced by kidney and helps in the formation of angiotensin , which causes vasoconstriction and increased blood pressure.
- **Regulation of blood pH :** They regulate the pH of blood by excreting h+ ions into the urine and conserve HCO_3-- ions , (it is an important buffer ions in the blood)
- **Regulation of blood ionic composition :** The regulate the concentration of some ions like Na+ , K+ , Ca++ , Cl-- etc.
- **Production of hormone :** they produce Calcitriol (the active form of vitamin D)which regulate the calcium homeostatasis (the maintenance of constant concentration of calcium ion in the extracellular fluid)
- **Stimulation of RBC production :** They produce erythropoietin Hormone which stimulate RBC production.
- **Regulation of blood glucose level :** They take part in maintenance of blood glucose level as they increase blood glucose level by gluconeogenesis process.

Excretion of Wastes from body : They excrete out waste materials from body like ammonia, urea , bilirubin , creatinine , uric acid , drug and toxins

Q2. Describe the kidney function test.

Ans. The following are some commonly performed tests to assess kidney function and their clinical significances :

1. **Blood tests :** Blood tests that measure levels of creatinine and blood urea nitrogen (BUN) are commonly used to assess kidney function. Creatinine is a waste product that is produced by muscle metabolism and excreted by the kidneys, while BUN is a waste product of protein metabolism. Elevated levels of creatinine and BUN in the blood can indicate decreased kidney function or kidney damage.
2. **Urine tests :** Urine tests that measure levels of protein and albumin are commonly used to assess kidney function. Albumin is a protein that is normally present in the blood, but not in the urine, while proteinuria is the presence of excessive amounts of protein in the urine. Elevated levels of protein and albumin in the urine can indicate decreased kidney function or kidney damage.
3. **Glomerular filtration rate (GFR):** GFR is a measure of the rate at which blood is filtered by the kidneys. It is calculated based on a person's age, sex, and blood creatinine levels. A GFR of less than 60 mL/min/1.73m2 for more than 3 months indicates chronic kidney disease.
4. **Imaging tests :** Imaging tests such as ultrasounds, CT scans, and MRIs may be used to assess the size, shape, and structure of the kidneys and detect abnormalities such as cysts or tumors.
5. **Biopsy :** Kidney biopsy may be performed to collect a sample of kidney tissue for microscopic examination to diagnose certain kidney diseases.

Q3. Write the function of liver.

Ans.

Function of liver

- → **Metabolism of carbohydrate :** liver Plays an important role in the metabolism of carbohydrates and release glucose into blood , in case blood glucose level is high liver convert glucose into glycogen and store it.
- → **Metabolism of protein and lipids :** In case glycogen is not enough to fulfill the body requirement of glucose , lever makes glucose from protein and fat which is called gluconiogenesis.
- → **Detoxification :** Liver detoxifies the toxic substance like al cohol drug and steroid hormone and prevents other tissue from damage.
- → **Storage :** liver stores glycogen , certain vitamins (fat soluble) and minerals (iron and copper)
- → **Phagocytosis :** The aged RBCs , WBC s and some bacteria undergo phagocytosis by kuffer cells of liver and destroyed.
- → **Formation of urea :** The ammonia is obtained during metabolism of protein which is highly toxic is converted into urea which is less toxic.
- → Formation of RBC in foetal life.
- → Destruction of aged RBC and formation of bile pigment.
- → Formation of plasma protein : like albumin , globulin prothrombin and fibrinogen.
- → Formation of heparin : it is a natural anticoagulant present in the blood.

Q4. Describe the liver function test.

Ans.

liver function tests

- ❖ **Alanine transaminase (ALT) and Aspartate transaminase (AST) :** These tests measure the levels of liver enzymes in the blood. High levels of ALT and AST are indicative of liver damage.
- ❖ **Alkaline phosphatase (ALP) :** This test measures the levels of ALP in the blood. Elevated levels of ALP may indicate liver or bone disease.
- ❖ **Bilirubin :** This test measures the levels of bilirubin in the blood. High levels of bilirubin may indicate liver disease or hemolytic anemia.
- ❖ **Albumin :** This test measures the levels of albumin in the blood. Low levels of albumin may indicate liver disease.
- ❖ **Prothrombin time (PT) :** This test measures the time it takes for blood to clot. Abnormal PT may indicate liver disease.
- ❖ **Gamma-glutamyl transferase (GGT) :** This test measures the levels of GGT in the blood. Elevated levels of GGT may indicate liver disease or alcohol abuse.

Q5. Describe the lipid profile test.

Ans.

Lipid Profile Tests

→ A lipid profile test is a blood test that measures the amount of different types of lipids, or fats, in your blood. The lipids measured in a lipid profile test include:

1. **Total cholesterol :** This measures the total amount of cholesterol in your blood, including both high-density lipoprotein (HDL) and low-density lipoprotein (LDL) cholesterol.
2. **HDL cholesterol :** This is often called the "good" cholesterol because it helps remove other types of cholesterol from your blood.
3. **LDL cholesterol :** This is often called the "bad" cholesterol because it can build up in your arteries and lead to heart disease.
4. **Triglycerides :** These are another type of fat that can build up in your blood and contribute to heart disease.

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