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MATRIC No.: 17/MHS01/206

DEPARTMENT: MEDICINE AND SURGERY

COURSE: MEDICAL BIOCHEMISTRY (BCH313)

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ASSIGNMENT

1. Define the following terms;

- A. **KETOGENESIS**; is the biochemical process through which organisms produce ketone bodies through breakdown of fatty acids and ketogenic amino acids.
- B. **KETONAEMIA**; this is the presence of an abnormally high concentration of ketone bodies in the blood.
- C. **KETONURIA**; this is the excretion of abnormally large amounts of ketone bodies in the urine, characteristic of diabetes mellitus, starvation or other medical condition.
- D. **KETOGENESIS**; is the biochemical process through which organisms produce ketone bodies through breakdown of fatty acids and ketogenic amino acids.

2. What are the consequences of Ketosis?

Ketosis is a metabolic state characterized by raised levels of ketone bodies in the body tissues, which is typically pathological in conditions such as diabetes or may be the consequences of a diet that is very low in carbohydrate. This has its consequences which are also the adverse effects of ketosis, they are; headache, fatigue, dizziness, insomnia, difficulty in exercise tolerance, constipation, and nausea, especially in the first days and weeks after starting a ketogenic. Breath may develop a

sweet, fruity flavor via production of acetone that is exhaled because of its high volatility.

Most adverse effects of long term ketosis reported are in children because of its longstanding acceptance as a treatment for pediatric epilepsy. These include compromised bone health, stunted growth, hyperlipidemia and kidney stone.

3. Write concisely on the management of Ketoacidosis.

Patients diagnosed with Ketoacidosis are usually admitted in the hospital or treated in the emergency room. The treatments involve;

- **Fluid Replacement;** the patients will receive fluids either by mouth or through a vein (intravenously) until rehydrated. The fluid helps replace lost fluid through urination, as well as help dilute excess sugar in the blood.
- **Electrolyte replacement;** electrolytes are minerals in the blood that carry an electric charge, such as sodium, potassium and chloride. The absence of insulin can lower the level of several electrolytes in the blood. The patient will receive electrolytes intravenously to keep the heart, muscles and nerve cells functioning normally.
- **Insulin Therapy;** insulin reverses the processes that cause diabetic Ketoacidosis. In addition to fluids and electrolytes, the patient will receive insulin therapy usually intravenously. When the patient's blood sugar falls to about 200mg/dL (11.1mmol/L) and the patient's blood is no longer acidic, intravenous insulin therapy maybe stopped and resumption of normal subcutaneous insulin therapy may begin.

Ketoacidosis can be prevented too by;

- Taking your diabetes medication as directed
- Following meal plan strictly and staying hydrated
- Testing blood sugar consistently.