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**BIOCHEMISTRY ASSIGNMENT**

**DIABETES, OBESITY AND CANCER**

1. Define the following terms

a. Ketogenesis: Ketogenesis means the formation of ketone bodies. It is the biochemical process through which organisms produce ketone bodies through breakdown of fatty acids and ketogenic amino acids. The liver is the only organ that synthesizes ketone bodies. Ketogenesis supplies energy under circumstances such as fasting or caloric restriction to certain organs particularly the brain, heart and skeletal muscle.

b. Ketonaemia: this is the presence of an abnormally high concentration of ketone bodies in the blood

c. Ketonuria: It is a medical condition in which ketone bodies are present in the urine. It is seen in conditions in which the body produces excess ketones as an indication that it is using as an alternative source of energy. It is seen during starvation or more commonly in type I diabetes.

1. What are the consequences of ketosis

Ketosis is a metabolic process. When the body does not have enough glucose for energy, it burns stored fats instead. This results in the build up of acids called ketones within the body. Ketosis is generally safe for most people. However, it may lead to a few side effects which include:

* Headache
* Fatigue
* Brain fog
* Increased hunger
* Poor sleep
* Nausea
* Decreased physical performance
1. Write conscisely on the management of ketoacidosis

Ketoacidosis is a serious diabetic complication where the body produces excess blood acids (ketones), this condition occurs when there isn’t enough insulin in the body. It can be triggered by an infection or other illness

Management

* Treatment consists of fluids

Hospital treatment to replace fluids and electrolytes and provide insulin therapy may be required

* Palliative care
* Cardiac monitoring: Using an electronic device to monitor heart rate and rhythm. The clinical importance of electrolyte levels in the management od diabetic ketoacidosis is the prevention of cardiac arrhythmias. ECG monitoring should be a minimal standard in the management of diabetic ketoacidosis.
* Fluid replacement: replacing fluids lost through sweating, bleeding, vomiting or diarrhea to treat or prevent dehydration. The initial priority in the treatment of diabetic ketoacidosis is the restoration of the extracellular fluid volume through intravenous administration of normal saline (0.9% sodium chloride solution)

*The therapeutic goal is for diabetic ketoacidosis consists of improving circulatory volume and tissue perfusion, reducing blood glucose and serum osmolality toward normal levels, clearing ketones from serum and urine at a steady distance, correcting electrolyte imbalances and identifying precipitating factors.*