Endocrinology II

Student protocol

Blood glucose

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Time (min) | **Control** | **Glc solution** | **White bread** | **Potato chips** |
| 0 |  |  |  |  |
| 30 |  |  |  |  |
| 60 |  |  |  |  |
| 90 |  |  |  |  |
| 120 |  |  |  |  |

Urine glucose

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Time (min) | **Control** | **Glc solution** | **White bread** | **Potato chips** |
| 0 |  |  |  |  |
| 30 |  |  |  |  |
| 60 |  |  |  |  |
| 90 |  |  |  |  |
| 120 |  |  |  |  |

Estimate the filtered glucose load for each protocol. The filtered load is calculated using the formula:

GL=GFR x blood glucose concentration (mg/min or mmol/min)

We have assumed that the GFR remains constant throughout the experiment. We also assumed a normal GFR of 0.12 L/min (120 ml/min).

Answer the questions:

1. List the hormones involved in glucose metabolism. Which one is most important in regulating blood glucose levels after absorption of glucose load?

2. Is it advisable to restrict exclusively sweets or carbohydrate-based foods in the diet of diabetics in general? Justify.

3. People with diabetes mellitus can regulate their diet to prevent blood glucose concentrations from rising too rapidly. What type of carbohydrate-based meal do you think would be most appropriate for a person with diabetes?

4. What is the physiological explanation for why glycaemia results after ingestion of white bread (protocol 3) differed from those after ingestion of potato chips (protocol 4)?

6. Evaluate the pattern of changes in blood and urine glucose measurements. Explain the differences between the protocols.

Signature: ……………………………………………..