

Case of glycosuria - polyuria

A 55 years old male presented to the outpatient internal medicine clinic by easy fatigability, headache, and increased frequency of urination with increase in the volume and increased desire to drink. These complaints started since 6 months.

His family history revealed that his father has type II diabetes mellitus.

His general appearance was healthy except he was obese. His BMI was 33. His blood pressure was 180/95; a urine dipstick was 3+ glycosuria and negative ketones. Random blood glucose level was 235mg/dl. Serum urea and creatinine were performed to test the renal functions. Their levels were within normal.

He was instructed to return back in the next morning for measuring fasting blood glucose level. It was 145mg/dl.

Given these findings, he was diagnosed with diabetes mellitus type II. Glycated hemoglobin (HbA1C) was measured and it was elevated (7.5%) so it supports pre-existence of DM for several months.

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- 1- Define polyuria and explain its mechanism in this case.
 - 2- Explain the mechanism of glucosuria in this case.
 - 3- Mention two causes of glucosuria other than diabetes mellitus.
 - 4- Define GFR, mention factors affecting it and what is the expected change of GFR in this case?

Case of Metabolic Acidosis

A 52 year-old man with a past medical history of diabetes and alcohol abuse, was admitted for acute diarrhea over the past few days.

Examination revealed: hyperventilation, disturbed consciousness, tachycardia, exaggerated intestinal motility.

Electrolytes evaluation revealed:

	<u>Reference ranges</u>
Na: 142	(135-145 mmol/L)
K: 3.2.	(3.5 - 5 mmol/L)
Cl : 110.	(95-105 mmol/l)
HCO ₃ : 20.	(23-30 mmol/L)
Glucose: 200.	(65-110 mg/dL)
BUN: 25.	(20-40 mg/dl))
Cr: 1.1.	(0.8-1.3 mg/dl)

A) What are the possible causes of metabolic acidosis in our patient?

B) What are instructions you would like to tell him to avoid acidosis?
