"Doctor, I Keep Having to Pee!"

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A 66-year-old female is seen at a walk-in clinic for dysuria and increased frequency of urination, which began overnight. She has no fever, vomiting, and flank pain. She is not on regular medications.

What is your Diagnosis?

This quick test shows glucose at 4^+, leukocytes at 2^+, protein at 2^+, and blood at 4^+. The patient has symptoms of lower urinary tract infection, and a urine dip supports the diagnosis. Commonly used antibiotics include trimethoprim and sulfamethoxazole, nitrofurantoin, and quinolones like ciprofloxacin or norfloxacin.

The other alarming finding on this urine dip is the significant amount of glucosuria. In diabetic patients with normal kidney function, glucosuria occurs when plasma glucose concentration is generally above 10 mmol/L. Any amount of glucose leakage requires further fasting blood glucose or nonfasting Hemoglobin A1c testing to confirm diabetes diagnosis.

Although incidental glucouria should be further investigated, urine dip is not a recommended means of screening for diabetes, due to the high rate of false negative results.

Further tests include hemoglobin A1c, a lipids profile, urine albumin-to-creatinine ratio, and serum creatinine. The patient was advised to follow-up with her family doctor.

The new Canadian Task Force on Preventive Health Care's diabetic screening guideline recommends hemoglobin A1c screening for diabetes, thus patients do not need to be fasting. Getting hemoglobin A1c is cheaper than fasting blood sugar.

Figure 1: Urine Dipstick

In patients who do not have diabetes, renal glucosuria can occur as an isolated finding or as a manifestation of renal tubular acidosis, hypophosphatemia, hypouricemia, and aminoaciduria.

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