Journal of Clinical and Basic Cardiology

An Independent International Scientific Journal

Journal of Clinical and Basic Cardiology 2004; 7 (1-4), 29

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Indexed in
Chemical Abstracts
EMBASE/Excerpta Medica

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Unusually High Blood Sugar as a Sign of Acute Myocardial Infarction

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Key words: blood sugar, myocardial infarction, hyperglycaemia, silent

We report 2 cases of acute myocardial infarction presented first with unexplained high blood sugar.

Case Report 1

A 67-year-old white male with a past medical history of diabetes mellitus type-2 for about 10 years and severe degenerative joint disease of the right knee was admitted for an elective knee replacement. He had been taking glyburide and metformin, and was switched to a regular insulin sliding scale for the perioperative period. His blood sugar checks ranged between 115 and 195 mg/dl. The second night after surgery, his fingerstick blood sugar checked "440" and 20 units of regular insulin were given subcutaneously. One hour later, his blood sugar was "495" and 20 units of regular insulin were administered. Yet another hour later his blood sugar was "critically high" with the upper limit of the glucometer of 500 mg/dl. The patient was completely asymptomatic. An electrocardiogram showed evidence of acute inferior myocardial infarction. Troponin-I and creatine kinase levels were elevated. A heparin drip was started and an intravenous beta-blocker was given. Cardiac catheterization revealed a 90 % stenosis of the right coronary artery and a stent was implanted.

Case Report 2

A 42-year-old white female with a past medical history of diabetes mellitus diagnosed at age of 11, presented to the emergency department with increasing lethargy and "not feeling well". She has been on subcutaneous insulin, and was switched to a subcutaneous insulin pump one year prior to admission and was compliant with her regimen. She had been experiencing stress from a recent divorce and was not feeling well with increasing somnolence. When she checked her fingerstick sugar it was "critically high (= 500)". She injected herself with 20 units of subcutaneous lispro insulin. The patient continued to have increasing lethargy for which she was brought to the emergency department by her neighbors. Laboratory studies revealed evidence of diabetic ketoacidosis with admission blood sugar over 700 mg/dl. The electrocardiogram revealed evidence of acute anterolateral myocardial infarction. Creatine kinase and troponin-I levels were high (CK level of 390 and troponin level of 23.3). Cardiac catheterization revealed 50–60 % stenosis of the left anterior descending artery and 99 % occlusion of the circumflex artery. A balloon angioplasty was performed and a stent was placed in the circumflex artery.

Discussion

Physicians should be alert to the possibility of acute myocardial infarction when there is an unexplained high blood sugar in diabetic patients. Persistent hyperglycaemia with non-specific constitutional symptoms may be a harbinger of "silent" myocardial infarction.

Received: January 21st, 2002; accepted: February 4th, 2002.
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