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Letter to Editor Open Access

Persistent Hypoglycemia Revealing Severe Heart Failure

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Letter to Editor

Hypoglycemia is frequently overlooked as an explanation for convulsions, coma or symptoms such as palpitations, sweating or bizarre behavior. Its association with congestive cardiac failure has been rarely reported but scant attention has been paid to the subject [1]. We report an observation of an 87-year old man who was admitted in hospital with coma. He has peripheral cyanosis, with heart rate 100 beats/min and blood pressure 110/80. Biological investigations included calcium 2.3 mmol/l, creatinine 127 mmol/l, aspartate transaminase 52 U/l, gamma glutamyl transaminase 20 U/l and blood glucose was 1.6 mmol/l. He was treated with 100 ml 30% dextrose intravenously. As a result, he recovered and woke up. Because of persisted hypoglycemia, we commenced on a continuous infusion of 10% dextrose. We looked for commonest causes of hypoglycemia but there was no diabetes or use of insulin and other hypoglycemic drugs. We did not find kidney failure nor liver disease. Clinical examination showed no signs of adrenal insufficiency or hypopituitarism. Furthermore, an insulin secreting tumor of the pancreas was ruled out by normal rate of insulinemia: 123 pmol/l (Normal values: 18 à 173 pmol/l) and peptide-C: 1.7 pmol/l (Normal values: 0.3-1.5 pmol/l). In fact, this patient was treated for hypertension and atrial fibrillation since several years. Chest X-ray showed an enlarged heart with bilateral exudative opacity. The diagnosis of acute congestive heart failure was confirmed by cardiac echography which revealed dilated cardiomyopathy with severe left ventricle failure (Ejection Fraction 15%). Right cavity and pulmonary artery pressure were normal. This patient was then treated by intravenous injection of furosemide (40 mg) three times daily. Two days later, we stopped the dextrose infusion without recurrence of hypoglycemia. Chest X-ray showed no signs of acute pulmonary edema.

The metabolic impairment in heart failure is very complex. All steps of energy extraction, transfer, and utilization are affected. Structural metabolism is impaired, leading to compromised functional integrity of tissues, such as liver [2]. The author considered that hepatic glucose output was reduced by poor glucose absorption and impaired hepatic glycogenolysis and gluconeogenesis in patients with congestive cardiac failure [3]. Mellinkoff and Tumulty reported 5 patients who had hypoglycemia during the course of congestive cardiac failure in which chronic passive congestion of the liver was shown in post-mortem [4].

In our observation, we are showing that persistent hypoglycemia could be a revealing symptom of heart failure.

The relationship between hypoglycemia and congestive heart failure is unclear. Persistent and intractable hypoglycemia is usually not due to functional hyperinsulinism in these patients.

Thus, when we are exploring hypoglycemia, we have to look for heart failure especially in elderly. The management of hypoglycemia in this case is based on intravenous glucose administration and the heart failure treatment. Because of the complexity of such situation, this goal is achieved only by collaboration between physicians, nurses and care manager [5, 6].

Conflicts of Interests

All authors report no conflict of interest with the above work.

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