Diabetes vignette

‘What kind of diabetes did you say I have?’

A 15-year-old male with septo-optic dysplasia, panhypopituitarism, developmental delay, diabetes insipidus, and autism was admitted to the hospital for hypoglycaemia. The patient started having sudden seizure activity that prompted fuller evaluation. His glucose level, upon admission to the hospital, was 28mg/dl (1.6mmol/L). The patient was resuscitated with intravenous glucose and his seizure activity stopped.

The past medical history included the diagnosis of septo-optic dysplasia at birth, growth hormone deficiency, secondary hypothyroidism, secondary adrenal insufficiency, diabetes insipidus, blindness, aggressive behaviour and autism. The patient had been taking growth hormone, levotyroxine, hydrocortisone and desmopressin acetate. There was no history of missed doses, fever, missed meals, vomiting, nor any other illnesses. He attends a school for blind children with special needs. His condition was monitored by a school nurse and supervised by a physician responsible for the school district system.

His physical examination revealed no rashes, hyperpigmentation, nor any focal neurological finding. Laboratory findings revealed initial hypoglycaemia as mentioned previously, normal T4, and somatomedin-C levels, white blood cell count, and electrolytes.

During hospital stay, the patient recovered from hypoglycaemia and went back to his previous functioning levels. Since there was no clear aetiology for the hypoglycaemia episode, the endocrinology team asked for documented dietary intake and scheduled medications given prior to hospital admission. This revealed no missed medication doses, but showed two daily doses of 20 units of insulin glargine (rDNA origin) injection that were given to the patient in the past two days prior to hospital admission. Further investigation showed that there was a new physician who took over the responsibility of the school system, and he ordered the insulin doses for a presumed diagnosis of diabetes mellitus rather than diabetes insipidus. The nurse never questioned the sudden start of insulin therapy without the documentation of hyperglycaemia. The mother was notified about the cause of hypoglycaemia; she sought legal action against this physician at the state school. The school system decided to settle the case out of court. The physician was penalised by the local State Medical Board and was required to take educational training courses to be able to differentiate types of diabetes.

Discussion

‘Diabetes’ means to ‘flow through’ or to ‘siphon’ in Greek language since affected patients urinate frequently. Ancient Greek physicians used to taste urine to differentiate the two types of diabetes (melitus vs insipidus) to distinguish the honeyed sweet diabetes. While the two conditions share the word ‘diabetes’, their aetiologies and medical management are completely different. Of note, Wolfram syndrome, or DIDMOAD syndrome, combines diabetes insipidus (DI), diabetes mellitus (DM), optic nerve atrophy (OA) and deafness (D).

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News

Bariatric surgery versus intensive medical therapy

A new study published in the New England Journal of Medicine has assessed outcomes three years after the randomisation of 150 obese patients with uncontrolled type 2 diabetes to receive either intensive medical therapy alone or intensive medical therapy plus Roux-en-Y gastric bypass or sleeve gastrectomy. The primary endpoint was an HbA1c level of ≤6%.

A total of 91% of patients completed 36 months of follow up. At three years, the primary endpoint was met by 5% of patients in the medical therapy group, as compared with 38% of those in the gastric bypass group (p<0.001) and 24% of those in the sleeve gastrectomy group (p=0.01). The use of glucose-lowering medications was lower in the surgical groups than in the medical therapy group and quality of life measures were significantly better in the surgical groups. Patients in the surgical groups had mean percentage reductions in weight of 24.5±9.1 in the gastric bypass group and 21.1±8.9 in the sleeve gastrectomy group as compared with a reduction of 4.2±8.3 in the medical therapy group.

Widening gap in regional diabetes amputation rates

New NHS data show that diabetes-related amputation rates have not improved at all, with 2.6/1000 diabetic people per year having a lower limb amputation. The gap between the worst and best performing areas has also increased. People in the two worst performing areas are now seven times more likely to have an amputation than those in the best performing area (Brent in London). In the previous year, the rate in the worst performing area was 5.4 times higher than in the best performing area.

Major depression may double kidney failure risk

Major depression may increase diabetes patients’ risk of developing kidney failure according to a new study published in the Clinical Journal of the American Society of Nephrology. University of Washington researchers studied 3886 diabetic adults; 448 (11.5%) of these patients had major and 327 (8.4%) had minor depressive symptoms. During median follow up of 8.8 years, 87 patients (2.2%) developed kidney failure. Patients with major depressive symptoms had an 85% higher risk of developing kidney failure. Additional studies are needed to determine the mechanisms involved, and whether treatment of depression can reduce the risk of kidney failure.