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Abstract ID: 3598

An unusual presentation of thyroid storm with cardiac failure in a young female

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We present a case of thyroid storm with cardiovascular manifestations, an unusual clinical presentation.

Thyroid storm is a rare, life-threatening exacerbation of thyrotoxicosis, characterized by systemic decompensation and multiple organ involvement. While the classic features include fever, tachycardia and altered mental status, atypical presentations may delay timely diagnosis.

In this case, a young female presented with cough, palpitations, shortness of breath and anasarca. She had no prior history of thyroid disorders or co-morbidities. Initially, she was managed for pulmonary embolism and heart failure based on her presenting symptoms. Subsequent investigations led to the diagnosis of thyroid storm, and she was managed accordingly.

The absence of hallmark clinical features resulted in a diagnostic delay. This case underscores the importance of maintaining a high index of suspicion in patients with unexplained systemic symptoms. Early recognition and appropriate management, including beta blockade, thionamides, corticosteroids and supportive care, are crucial for favourable outcomes in this life-threatening condition.

This case highlights the need for heightened clinical awareness of atypical thyroid storm presentations to reduce morbidity and mortality.

Abstract ID: 3609

Treatment-resistant type B insulin resistance syndrome associated with a total anterior circulatory stroke in a young adult

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A 49-year-old woman of African origin with a recent diagnosis of T2DM presented with right-sided hemiparesis and expressive aphasia. Brain imaging demonstrated a total left anterior circulation ischaemic stroke, and she underwent thrombolysis and mechanical thrombectomy. On admission, she was hyperglycaemic and met the criteria for diabetic ketoacidosis. Following resolution of the ketoacidosis, her hyperglycaemia persisted, requiring up to 200-800 units of insulin daily. Further testing confirmed the diagnosis of type B insulin resistance syndrome through the detection of insulin receptor antibodies. The patient was treated with four rounds of plasmapheresis followed by two cycles of rituximab and high-dose intravenous methylprednisolone. Her insulin requirements remain high but have slightly improved, allowing transition to a high-dose basal-bolus regimen. The patient remains under the joint care of rheumatology, stroke and diabetes specialists for management of her autoimmune condition, immunosuppressive treatment and the sequelae of her stroke.

Abstract ID: 3611

Evaluating the effectiveness of insulin pump therapy and structured education in type 1 diabetes: a 25-year single-centre audit

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Objective: Insulin pumps (continuous subcutaneous insulin infusion, CSII) are increasingly used for management of glycaemia in people with type 1 diabetes (T1DM). We retrospectively examined the impact of a structured education course, Dose Adjustment for Normal Eating (DAFNE), on people with T1DM commenced on insulin pump therapy at Norfolk and Norwich University Hospital.

Methods: We retrospectively analysed databases of people with T1DM who were commenced on insulin pump therapy (CSII) in the period between January 1999 and December 2024. The local diabetes management system Diamond, electronic document template (EDR), local DAFNE database and ICE system were used to collect retrospective data.

Results: In total, 511 individuals with T1DM were commenced on CSII therapy during this period, of whom 138 (27%) had completed DAFNE education. The median age was 35 years (IQR 27.0-48.0), with a male-to-female ratio of 32:68. Most participants were of White British ethnicity. Median BMI was 26.4 kg/m^2 (IQR 23.4-30.9), and the duration of diabetes was 22.8 years (IQR 16.3-33.8). Severe hypoglycaemia was reported in 44 (8.6%) CSII users. 183 (35.8%) utilised hybrid closed-loop systems.

Mean (SD) baseline HbA1c was 61 (14.7) mmol/mol. CSII users with the highest baseline glycaemia (HbA1c 85 mmol/mol [9.9%]) experienced the greatest improvement, with a mean reduction of 29 mmol/mol (17-64). Individuals with the lowest baseline HbA1c levels (below 53 mmol/mol [7.0%]) experienced a mean increase in HbA1c of 3.5 mmol/mol (9.7) among DAFNE graduates compared to 7.09 mmol/ mol (12.43) without DAFNE. The changes at 6, 12 months and the latest HbA1c for DAFNE graduates were statistically significant ($p < 0.001$).

DAFNE graduates showed more sustained improvement in HbA1c compared to non-DAFNE graduates beyond 12 months. While both groups saw an initial drop in HbA1c at six months, in non-DAFNE graduates HbA1c reduction was not sustained over time compared to DAFNE graduates.

Conclusion: Insulin pump therapy was effective in improving HbA1c in individuals with sub-optimal glycaemia and /or a history of severe hypoglycaemia. However, DAFNE education seems to provide long-term sustained reduction in HbA1c amongst CSII users, suggesting additional benefit of structured education even in individuals who are established on CSII therapy.