Case Study: A rare presentation of T2D; a young male with acute pancreatitis, diabetic ketoacidosis and moderate hypertriglyceridaemia

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Introduction: The triad of diabetic ketoacidosis (DKA), acute pancreatitis (AP), and hypertriglyceridaemia (HTG) has been described mainly in T1DM with few cases in T2DM. We report the first case of this triad revealing T2DM.

Case report: A 30-year-old male with strong family history of T2DM presented to the emergency with severe epigastric pain radiating to the back associated with abdominal swelling, vomiting and diarrhea. He also reported history of polyuria and polydipsia with undocumented weight loss for one month prior to presentation. Clinically, he was found to have distended abdomen which was tender all over especially in the epigastrium. A urine dipstick was positive for +3 ketone and +3 glucose. The serum glucose level was 30.6 mmol/L. Blood work demonstrated high anion gap metabolic acidosis, high amylase and moderate hypertriglyceridaemia (10.67 mmol/L). A CT scan of the abdomen revealed that the pancreas was bulky with peri-pancreatic fluid collection suggestive of acute mild exudative pancreatitis. The diagnosis of DKA, AP precipitated by HTG was established. The patient was managed with intravenous fluid, potassium replacement, and insulin infusion in addition to analgesic until he improved. He was then shifted to multiple doses of insulin and started on fenofibrate 145 mg daily. The C-peptide was 538 pmol/L (366 – 1466). The HbA1c was 10%, and all pancreatic auto-antibodies were negative. At the follow up visit two weeks later, the patient was doing well. His home glucose monitoring showed fasting blood sugar ranging between 4.4 – 6.5 mmol/L and 2 hours postprandial readings between 8 - 10 mmol/L. The triglyceride level becomes normal (1.72 mmol/L).

Conclusion: This patient is likely suffering from T2DM supported by detectable C-peptide level and negative pancreatic auto-antibodies in addition to strong family history of T2DM. Our report stresses that DKA, AP, and HTG can be a rare presentation of T2DM.

Table 1: Laboratory result at presentation

	Result (normal range)
pH	7.28 (7.35 – 7.45)
Bicarbonate(mmol/L)	13.5 (19 – 26)
Na^+(mmol/L)	135 (135 – 148)
Cl^-(mmol/L)	96 (98 – 107)
Glucose(mmol/L)	31.2
Urea(mmol/L)	5.1 (2.3 – 7.5)
Creatinine(µmol/L)	71 (59 – 104)
Corrected Calcium (mmol/L)	2.27 (2.04 – 2.42)
Amylase (U/L)	196 (0 – 100)
Total Cholesterol (mmol/L)	6.61
Triglyceride (mmol/L)	10.7
HDL (mmol/L)	0.25
LDL (mmol/L)	0.78
C-peptide (pmol/L)	538 (366 – 1466)

Table 2: Laboratory results after two weeks.

Total Cholesterol (mmol/L)	4.2
Triglyceride (mmol/L)	2.47
HDL (mmol/L)	0.8
LDL (mmol/L)	2.62
HbA1c (DCCT)	10.0%
HbA1c (IFCC)	
Anti-GAD AB	4 (< 10 is negative)
Anti-IA2 Ab	2 (< 10 is negative)
Ilet's Cell Ab	Negative