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CAN ARTIFICIAL INTELLIGENCE (CHATGPT) REPLACE HEALTHCARE PROVIDERS' WORKLOAD IN MANAGING TYPE 2 DIABETES?

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INTRODUCTION
ChatGPT is a large language model developed by OpenAI. It provides human-like responses to questions and solves cognitive problems by reinforcing learning via data from online human responses. Diabetes is a chronic illness and information found online can be misleading. This study aims to explore potentials of ChatGPT in providing accurate and patient-friendly diabetes knowledge.

METHODOLOGY
Open-ended questions pertaining to diabetes pathophysiology, complications, treatment and cure were input into ChatGPT via chat.openai.com platform. Responses were recorded and performance of ChatGPT was graded by two endocrinologists to assess the accuracy of the information.

RESULT
Overall, artificial intelligence performed well in delivering facts regarding general diabetes knowledge. AI explained in detail the pathophysiology of diabetes, emphasizing the role of insulin in hyperglycaemia. Complications of diabetes were laid out systematically and divided according to the organs involved, though explanations were oversimplified. The approach to treatment of diabetes was clear, where AI explained lifestyle modification followed by differentiating types of medications, including insulin and oral anti-diabetic agents. Errors were detected, such as AI mislabelling SGLT2 inhibitors as injectable medications. Monitoring and follow-up were included. Responses to inquiries regarding diabetes cure were interesting, as AI emphasized the chronic nature of diabetes. It also explored pancreatic transplantation and immunotherapy in type 1 diabetes.

CONCLUSION
Artificial intelligence has come a long way to provide humanoid responses to questions. It provides accurate information on most diabetes topics with nuances of diabetes educators. There was no inclusion of misinformation rampantly found in social media and web-based platforms. In conclusion, AI can assist healthcare providers in diabetic counselling and education.

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CASE SERIES OF SEVERE INSULIN RESISTANCE IN HOSPITALIZED PATIENTS

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INTRODUCTION/BACKGROUND
Hyperglycaemia is common in hospitalized patients and is associated with poorer clinical outcomes. Multiple factors contribute to hyperglycaemia in hospitalized patients, such as underlying medical conditions, pathophysiological stress and medications. The development of transient insulin resistance is a known cause of hyperglycaemia in patients with and without diabetes, but we rarely see severe cases. Here we report 2 cases of severe insulin resistance in hospitalized patients to illustrate the challenge of managing these cases.

CASE
The first case is a 34-year-old male with type 2 diabetes mellitus, morbid obesity (BMI 44 kg/m^2), hypertension, hyperlipidaemia and right knee arthrofibrosis. He developed severe diabetic ketoacidosis with severe insulin resistance secondary to severe pneumonia, steroid therapy and morbid obesity five days after knee surgery.

The second case is a 57-year-old female with type 2 diabetes mellitus and obesity (BMI 33 kg/m^2) who developed severe insulin resistance secondary to severe pneumonia.

Both cases were treated in an intensive care unit (ICU) with high-dose insulin infusion of up to 47 units/hour and guided by Nebraska Medical Centre insulin protocol. There were good outcomes for both patients, and insulin resistance resolved after treatment of sepsis.

CONCLUSION
Severe insulin resistance in hospitalized patients is a challenging condition to treat. Besides using high doses of insulin, we also need to treat the underlying medical condition which can precipitate insulin resistance.