

An extremely rare case of diabetic ketoacidosis requiring endotracheal intubation in a type 2 diabetic patient secondary to antipsychotic drug

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Abstract

A 60-year-old male patient was admitted due to sudden loss of consciousness. The patient was unconscious, Glasgow Coma Scale had a score of 4 and the skin turgor tonus turned out to be reduced in the physical examination. Other physical examination findings were normal. Biochemical analysis of blood glucose revealed a value of 407 mg/dl. Arterial blood gas examination revealed that pH was: 7.13, PaO₂ was: 41.5 mm Hg, PaCO₂ was: 46.7 mm Hg and HCO₃ was: 15.6mEq/L. Positive ketonuria was detected in urinalysis. The patient was intubated and mechanical ventilation support was given because of the low Glasgow Coma Scale. The patient was diagnosed with diabetic ketoacidosis and admitted to intensive care unit. Patient's acidosis and ketonuria were recovered after medical treatment and subsequently the patient was discharged with oral antidiabetics.

In diabetic patients, ketoacidosis dependent on antipsychotic drugs is extremely rare and a fatal condition. A very small proportion of cases of diabetic ketoacidosis require intubation. Herein we want to emphasize a very rare condition that develops secondary to antipsychotic drugs.

Keywords: antipsychotic drugs, diabetes mellitus, diabetic ketoacidosis.

Introduction

Diabetic ketoacidosis is one of the most important conditions and could be a fatal endocrine emergency (1,2). Rapid diagnosis and treatment of the patients reduces mortality rates. Unlike other acute diabetic complications, ketoacidosis is often a condition which may be missed when the patient's consciousness is normal because of the lack of urine tests and blood gas analysis. Rarely, this condition can make changes of the consciousness.

We aimed to present a case of diabetic ketoacidosis due to antipsychotic medication which was requiring endotracheal intubation.

Case report

A 60-year-old male patient was admitted due to

sudden loss of consciousness. The patient was using oral antidiabetic and antipsychotic for diabetes and schizophrenia, respectively. The patient was using oral antidiabetic drugs irregularly. The patient was unconscious, the Glasgow coma scale had a score of 4 and the skin turgor tonus was reduced in the physical examination. Other physical examination findings were normal. Biochemical analysis of blood glucose revealed 407 mg/dl. Arterial blood gas examination revealed that pH was: 7.13, PaO₂ was: 41.5 mm Hg, PaCO₂ was: 46.7 mm Hg and HCO₃ was: 15.6 mEq/L. Positive ketonuria was detected in urinalysis. The patient's laboratory results are summarized in Tables 1-3. The patient was intubated and mechanical ventilation support was given because of the low Glasgow coma scale.

Table 1. The patient's urinalysis results

| Urinalysis | |
|--------------|----------|
| Density | 1025 |
| Nitrite | Negative |
| Ketone | 2+ |
| pH | 5,5 |
| Protein | Negative |
| Urobilinogen | Normal |
| Erythrocytes | 2+ |
| Leukocytes | Negative |
| Glucose | 1+ |
| Bilirubin | Negative |

The patient was diagnosed with diabetic ketoacidosis and admitted to intensive care unit. Insulin infusion and fluid therapy was started. The patient's consciousness came to normal with the

treatment. Patient's acidosis and ketonuria were recovered, then the patient was discharged with oral antidiabetics.

Table 2. The patient's laboratory values

| Laboratory parameters | |
|------------------------------|--------------|
| WBC | 19.31 K/ul |
| Hemoglobin | 14.2 gr/dl |
| Platelet count | 249.7 K/ul |
| Glucose | 407 mg/dl |
| Urea | 37 mg/dl |
| Creatinine | 1.2 mg/dl |
| ALT | 22 U/L |
| AST | 27 U/L |
| ALP | 159 U/L |
| Na | 139 mmol/l |
| K | 4.9 mmol/l |
| Cl | 104 mmol/l |
| Ca | 8.9 mg/dl |
| Troponin I | <0.010 µg /l |
| CRP | <0.50 mg/l |
| Procalcitonin | 0.13 µg /l |

Table 3. The patient's blood gas results

| Blood gas analysis | |
|---------------------------|------------|
| pH | 7.13 |
| HCO ₃ | 15.6 mEq/L |
| PaCO ₂ | 46.7 mm Hg |
| PaO ₂ | 41.5 mm Hg |
| SaO ₂ | 61 % |

Discussion

Diabetes mellitus is one of the most common chronic diseases in the world, and affects the sustainable employability (3). There is insulin deficiency or insulin resistance in the pathogenesis

of diabetes mellitus. Type 2 diabetes mellitus, which begins with insulin resistance, is a preventable disease (4). There are many causes of diabetes mellitus. Taking antipsychotic drugs is a rare cause of type 2 diabetes mellitus (5).

Diabetic ketoacidosis is one of the most important and fatal endocrine emergencies. Rapid diagnosis and treatment of the patients reduce mortality rates. Unlike other acute complications, diabetic ketoacidosis is often a condition that can be missed if the patient's consciousness is clear and blood gas and urine are not examined. But, in rare cases it

can make changes in consciousness that can reach the coma. In diabetic patients, ketoacidosis is extremely rare and may be fatal condition. A very small proportion of cases with diabetic ketoacidosis require endotracheal intubation.

Our case study highlights a very rare condition that develops secondary to antipsychotic drug.

Conflict of interest: None declared.

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