Acute poisoning with Tricholoma equestre

Four cases, including three adults and one child, suffering from acute poisoning with Tricholoma equestre were described. The patients had eaten from 100 to 400 grams of the mushroom within a few consecutive meals. After consuming about 1000 grams of Tricholoma equestre for 3-4 days, the subjects developed fatigue, muscle weakness, myalgia, and in two cases acute respiratory failure with the need of respiratorotherapy. Maximal serum CK was 48136 U/L in the adults and 406 U/L in children. Maximal serum levels of AST and ALT were 802 U/L and 446 U/L in adults and 39 U/L, and 56 U/L in a child. All routine biochemical tests were within normal range. No other causes of rhabdomyolysis such as parasitic or viral infections, immune diseases, trauma or exposure to medications were found. Patient, aged 72 yrs., who developed acute respiratory failure, died in the second day of hospitalization. In other patients all the above mentioned symptoms and biochemical abnormalities disappeared from 2 to 3 weeks of hospitalization. Physicians should be aware of the possibility of appearance of rhabdo-myolysis after repeated consumption of large quantities of Tricholoma equestre.

Introduction

We present four cases, including three adults and one child, who were admitted to the hospital from 2002 to 2008 because of rhabdomyolysis caused by excessive consumption of Tricholoma equestre.

Case report

Case number one and two: Mother and her son, aged 48 and 20 years, respectively, were admitted to the hospital because of the following symptoms: fatigue, striated muscle weakness, myalgia especially in muscles of the legs, loss of appetite, mild nausea, and profuse sweating. All symptoms appeared approximately 48 hours after the last meal containing Tricholoma equestre, which had been eaten by the family recently (last 3-4 hours after the last meal containing Tricholoma equestre. Medical history revealed that the child had been eating about 300-400 grams of this mushroom daily for the four consecutive days. Physical examination revealed symptoms like vomiting, diarrhoea, fever or erythema were observed. Physical examination revealed regular heart rate about 90 b./min in the mother and 85 b./min in the son, blood pressures were 140/60 mmHg, and 125/70 mmHg respectively. No other important abnormalities were found. Maximal serum CK activity was 18150 U/L in the mother and 48136 U/L in the son. Maximal serum levels of AST and ALT were 802 U/L and 446 U/L in the mother and 2002 U/L and 454 U/L in the son. Other hepatic, renal and coagulation tests, as well as electrolyte levels, including potassium values, were normal. All symptoms disappeared within 3 weeks of supportive treatment, however, the muscle weakness lasted for about 2-3 months more.

Case number three: A five-year-old male child was admitted to the clinic because of deep coma, cyanosis and convulsions. All theses symptoms appeared about 4 hours after the last meal containing Tricholoma equestre. Medical history revealed that the child had been eating about 300-400 grams of this mushroom daily for the four consecutive days. Physical examination revealed deep coma (4 score GCS), regular heart rate about 120/ min, blood pressure 110/60 mmHg, and breath rate about 6/min. There were: bilateral, positive Babinski sign and symmetrical increase muscle tone in the neurological examination. No changes in computerized tomography of the head, chest x-ray, lumbar puncture, encephalography, echocardiography and toxicological tests were found. The biochemical tests showed elevated serum CK activity 306 U/L (normal range 5-130 U/L for a child).
ALT 56 U/L (normal range 5-45 U/L for person between 1-19-year old), pH 7.28, BE 5.9 mEq/l, HCO3 22.9 mEq/l, pO2 43.9 mmHg, pCO2 59.8 mmHg. Because of acute respiratory insufficiency the child was intubated and respiratorotherapy, lasted 34 hours, was applied. For the next week after that extubation, the child still presented with muscle weakness which included especially the pelvic girdle and the urinary bladder. The boy could not sit or stand up without help, and the bladder had to be catheterised to avoid urine retention. All the symptoms disappeared within 2-3 weeks of hospitalisation.

Case number four: A man aged 72 was admitted to the hospital because muscle weakness, and myalgia (especially the quadriceps), which lasted for four days. All symptoms appeared about 24 hours after the last meal containing Tricholoma equestre. The patient had eaten the mushroom for the last ten consecutive meals. The average dish contained about 300-400 grams of Tricholoma equestre. There were no changes in physical examination except muscle pain of both legs and increasing problem with walking. Maximal CK activity was 44767 U/L, CKMB 888 U/L, TNI 1.9 ng/ml, AST 1894 U/L, and ALT 490 U/L. Other hepatic, renal and coagulation tests as well as electrolyte levels, including potassium, were normal. No changes in computerized tomography of the head, chest X-ray, echocardiography and toxicological tests were found. In the second day of hospitalisation the patient reported pain and weakness of the muscle of the chest, shoulders and abdomen. The patient complained of dyspnoea, and a few hours later breathing problems appeared. The patient was transferred to the ICU, intubated and connected to the respirator. About 4.5 hours later - cardiac arrest was noted and CRP was ineffective.

Several studies for parasites and other microorganisms (trichinella, toxoplasma, coxsackievirus, HIV, HCV and HBV), as well as for systemic diseases were negative for all observed patients.

Discussion

The most common causes of rhabdomyolysis are muscle compression, neuromyopathic or leptinergic syndrome, intoxication with alcohol, amphetamine, cocaine, antihyperlipemic drugs, antimyastin, toxicin, phenothiazines, theophylline or long-term use of levodopa, quinidine, phenytoin, penicillamine and others [2-5].

In 2001, Bedry and co-workers observed rhabdomyolysis in twelve patients in southwestern France after excessive consumption of Tricholoma equestre [1]. The main symptoms described by the authors included muscle weakness, fatigue, malaise, rhabdomyolysis, nausea without vomiting, and diaphoresis without fever. The same signs, except facial erythema, were observed also in our cases.

The biochemical results showed marked increase in CK, AST and ALT levels. However, in the child, the level of these enzymes did not correspond well with the grave clinical condition of the patient.

Quite interesting is a delay between Tricholoma equestre consumption and rhabdomyolysis occurrence. Bedry and co-workers observed the clinical signs about 24-72 hours after consuming the last three consecutive meals with this mushroom [1]. In our cases the symptoms appeared after having more than 1000 grams of Tricholoma equestre in less than four days.

One of our patients died despite intensive care because of acute respiratory failure. The high mortality rate of about 25% was also observed by Bedry and co-workers [1].

Conclusions

1. Physicians should be aware of the possibility of acute intoxications after repeated consumption of large quantities of Tricholoma equestre.

2. The clinical picture of poisonings with this wild mushroom may be different in children and adults.

3. There is a delay between ingestion and onset of clinical symptoms.

4. Intoxication of Tricholoma equestre is connected with high mortality rate (about 25%).

References


