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Case Report

Colchicine Intoxication: A Case Report

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ABSTRACT

Colchicine is produced from the essence of the lily plant that has been cured for many sicknesses such as familial Mediterranean fever, recurrent pericarditis, gout since it has anti-inflammatory properties. This anti-inflammatory drug's acute intoxication has a high mortality rate and is a critical clinic to follow but not very common. The intoxication severity and mortality are directly depending on the ingested dose. However, although its treatment is principally symptomatic, if left untreated, it is a clinical effect that can be fatal depending on the dose taken directly. In our case, we aimed to present the patient hospitalized in the intensive care unit due to 30 tablets of colchicine intaken and finally was discharged in good health.

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Introduction

Acute colchicine poisoning is a rare clinical entity that causes multiple visceral failures. The severity of colchicine poisoning depends on the doses received. We presented a 34-year-old female patient that ingested colchicine for suicidal purposes and was discharged in good health.

Case Report

A 34-year-old female patient with a diagnosis of familial Mediterranean fever (FMF) was admitted in the emergency department after 4 hours of voluntary ingestion of 1 mg x 30 colchicine pill and 2 antibiotics of unname for suicide. At admission, she had abdominal pain and vomiting, and she was conscious. Vital data at admission; body

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Table 1. The course of the patient's laboratory tests.

Test (reference values)	1st day of hospitalization	2nd day of hospitalization	3rd day of hospitalization	4rd day of hospitalization
BUN (8-23 mg/dL)	6	6	8	11
Creatinine (0.57-1.1 mg/dL)	0.34	0.38	0.79	0.5
AST (5-34 IU/L)	36	37	33	24
ALT (0-55 IU/L)	15	15	18	17
Sodium (136-145 mmol/L)	132	138	137	138
Chlorine (98-107 mmol/L)	108	107	105	103
Calcium* (8.4-10.2 mg/dL)	6.7	9.3	8.7	8.3
Potassium (3.5-5 mg/dL)	7	4.3	4.8	3.9
Magnesium (1.6-2.6 mg/dL)	1	2.4	1.3	1.9
Leukocyte (3.5-10.5/mcL)	9.2	9.1	7.1	6.6
Hemoglobin (12-15.5 g/dL)	11.8	12	11.7	11
Platelet (150-450 k/mcL)	414	428	399	346
INR (0.8-1.2 kU/L)	1.1	1.2	0.9	0.8
PT (10.5-14.5 sec)	14.2	15.3	11.9	10.7
aPTT (21-35 sec)	24.3	22.6	24.6	21.7
D-dimer (0-0.50 mg/dL)	3.7	4.8	1.6	1.4

*corrected with serum albumin.

temperature 36 °C, blood pressure 110/70 mmHg, pulse 80/min, oxygen saturation 100%, pH 7.29, paO_2 126 mmHg $paCO_2$ 245 mmHg, HCO_3 20 mg/dL, lactate 4.6 mg/dL, base deficit -4.3 in blood gas, creatinine 0.43 mg/dL, BUN 8 mg/dL, potassium 7 mmol/L, calcium 7.7 mmol/L. After gastric wash was achieved and given activated charcoal treatment, she was admitted to the intensive care unit (ICU). During her stay in ICU, the patient was ventilated with a nasal mask (6 L/min) for oxygen support. In addition, the patient was administrated isotonic salin (100 cc/hour). Oral intake of the patient was closed. Urine output and electrolyte follow-up were closely monitored. The progression of laboratory findings is shown in Table 1. No clinical arrhythmias or respiratory problems were observed during her stay. On the 2nd admission day, she had profuse diarrhoea, abdominal pain and vomiting while stopped on the 3rd day of follow-up. On the 8th hospital day, her general condition was good, whose hemodynamics was stable and laboratory values returned to normal, and was referred to the internal medicine clinic.

Discussion

Colchicine is a fat-soluble, rapidly absorbed alkaloid from the gastrointestinal tract, and its biological effect is related to its plasma concentration level. The time required for this effect is between 30-120 minutes.[1] Since it binds to plasma proteins, the use of hemodialysis is limited in its treatment, and there is no known antidote. Since it is known that oral activated charcoal enters the enterohepatic circulation and reduces the absorption of colchicine, we administered oral activated charcoal to our patient, and We did not give any other special treatment for poisoning.[2] Colchicine exerts its effect by dose/time-dependent tubulin polymerization and mitosis inhibition. It causes minor toxicity at low doses (<0.5 mg/kg) and an early stage (<24 hours). It has major toxicity and 10% mortality at higher doses (0.5-0.8 mg/kg). There is a risk of cardiogenic shock/arrhythmia and higher mortality at doses >0.8 mg/kg and in the late course (>24 hours).[3] However, the amount of drugs taken and the severity/prognosis of clinical

findings are not directly proportional. It may start with gastrointestinal (nausea, diarrhoea, etc.) symptoms and multiorgan failure and respiratory depression. Haematological changes such as severe granulocytopenia/thrombocytopenia or metabolic changes such as hypophosphatemia, hyponatremia, hypokalemia, hypocalcemia, metabolic acidosis frequently occur.[4] Patients who survive the acute phase usually recover, and after the first week, many systems improve. In our case, severe electrolyte imbalances were observed on the second day of hospitalization. Necessary replacements were made, and he was healthily transferred to the clinic without any complications.

Our patient observed nothing except for the early-stage characteristic features (diarrhoea, abdominal pain, and vomiting). There was no bone marrow suppression or elevation in liver enzymes in the follow-up. Although infectious complications are widespread in the second stage of colchicine poisoning due to neutropenia, our case did not occur.

Conclusion

Although colchicine intoxication is a fatal condition, early diagnosis and close follow-up can positively affect the prognosis. Gastrointestinal findings may not be easily recognized because their appearance may resemble other systemic diseases. Promising specific treatments such as Fab fragment antibodies may be effective but are unfortunately not commercially available.

Acknowledgment

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Conflict of interest

The authors declared that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Authors' Contribution

Study Conception: ACE, MeS, MuS; Study Design: ACE, MeS, MuS; Supervision: ACE, MeS, MuS; Materials: ACE, MeS, MuS; Data Collection and/or Processing: ACE, MeS, MuS; Statistical Analysis and/or Data Interpretation: SK; Literature Review: ACE, MeS, MuS; Manuscript Preparation: ACE, MeS, MuS; Critical Review: ACE, MeS, MuS.

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