Clinical Notes

Colchicine poisoning in a very young child

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Therapeutic applications of colchicine have widened to include familial Mediterranean fever, primary biliary cirrhosis, liver cirrhosis, Behçet's syndrome, recurrent pericarditis, and scleroderma.[1] Colchicine poisoning is uncommon, but its mortality is rather high. Within 30-120 minutes following its ingestion, it is rapidly absorbed from the gastrointestinal tract leading to multiple complications.

A 2-year-old girl was admitted to our hospital with complaints of a sudden onset of abdominal pain and vomiting. Drug poisoning was suspected, and family members were questioned accordingly. Her father had been diagnosed with gout and he was using colchicine dispert (0.5 mg) dragées. Detailed history revealed an accidental ingestion of almost 25 dragées of colchicine dispert 2 hours before her admission. Upon admission, she was pale and agitated. Her blood pressure was 95/55 mm/Hg, axillary temperature was 36.8^{O}C, heart rate was 136 beats per minute, and respiratory rate was 34 breaths per minute. Her weight was 10 kg (3-10 percentiles) and height was 85 cm (25-50 percentiles). Abdominal auscultation revealed increased intestinal sounds. The rest of her physical examination was unremarkable. Whole blood count revealed the following: 60.4000 leukocytes/mm^3, 13.4 g/dl hemoglobin (Hb), and 436.000/mm^3 thrombocytes. On laboratory evaluation, a moderately increased aspartate aminotransferase (106 IU/mL) levels was found. C-reactive protein, erythrocyte sedimentation rate, serum sodium and potassium, urea, creatinine, calcium, and phosphorus levels were normal. Gastric lavage was performed and 1 g/kg of activated charcoal was orally administered. On the second day of hospitalization, she developed tachycardia, with a heart rate of 180 beats per minute. Electrocardiography revealed sinus tachycardia, and digoxin was administered. Echocardiography was normal. Vomiting and diarrhea persisted. Serum sodium and potassium levels decreased to 113 mmol/L and 3 mmol/L. In order to correct the fluid and electrolyte imbalance, intravenous fluid administration was initiated (3000 ml/m^2/day, 1/5 isotonic saline in 5% dextrose solution, 3% NaCl solution). On the third day, severe thrombocytopenia (23.000/mm^3), leukopenia (2500/mm^3), and anemia (8.3 g/dL) were detected, but no bleeding, petechiae, ecchymoses, or hyperthermia developed. On the second week, total alopecia developed (**Figure 1**). Her abdominal pain, vomiting, and diarrhea were resolved during the first week, biochemical and hematological values returned to normal within 10 days. She was discharged on the following 13 days of treatment at the hospital. Her follow-up as an outpatient lasted for 10 months and it was uneventful. The clinical manifestations of colchicine toxicity can be broadly divided into 4 stages. The first stage is characterized by severe gastrointestinal symptoms such as, nausea, vomiting, diarrhea, abdominal distention, and abdominal pain besides leukocytosis. These symptoms develop within the first 4 to 8 hours following ingestion. At the second stage, usually between the second and eight days of poisoning, cardiorespiratory collapse and multiorgan failure occur. Colchicine induces adult respiratory distress syndrome, myocardial toxicity, and rhabdomyolysis. At the third stage, bone marrow suppression, and as a result, pancytopenia develops. The fourth stage is characterized by a rebound leukocytosis, and a total body alopecia occurring from day 10 onwards, which recovers over a period of several weeks. In the present case, gastrointestinal symptoms such as vomiting, diarrhea, abdominal pain, and leukocytosis developed on the first day. On the second day, hyponatremia, hypokalemia, and hypovolemia developed due to vomiting and diarrhea, resulting in heart failure. On the third day, pancytopenia occurred. On day 10, clinical and laboratory findings improved, and on the 13th day, she was discharged

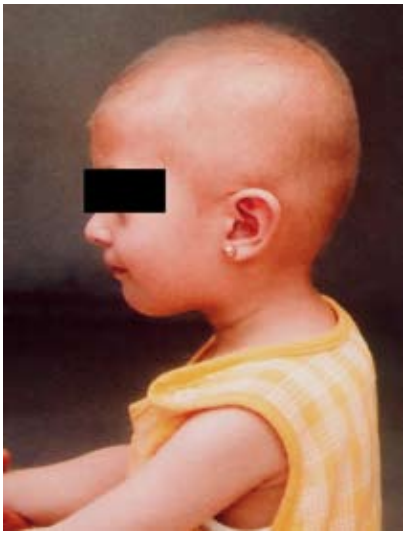

Figure 1 - Alopecia due to colchicine intoxication.

with complete recovery. On the second week, hair loss developed but recovered during the second month. Death usually occurs approximately 36 to 72 hours after ingestion, resulting from hypovolemic shock or cardiopulmonary failure.[2] The risk of colchicine intoxication is dependent on the ingested dose. According to published data, doses less than 0.5 mg/kg usually give rise to gastrointestinal symptoms, and doses greater than 0.8 mg/kg are almost invariably fetal.[3] The youngest reported patient with colchicine intoxication is a 3-year-old child, who ingested an inappropriate dose and recovered completely.[4] A fetal pediatric case of colchicine poisoning has also been reported.[2] Possibly, our patient had acutely ingested approximately 1.25mg/kg of colchicine. Unfortunately, the serum colchicine level could not be determined, due to the unavailability of necessary technical equipment. Our patient survived despite ingestion of almost 1.25 mg/kg of colchicine. We suggest that following factors may have contributed to this favorable outcome: 1. She vomited early after ingestion possibly resulting in the removal of some colchicine from the body; 2. She was immediately transferred to hospital, and 3. She did not have any concomitant liver or renal disease. Brevar et al[5] reported a case with chronic liver disease, suffering from symptoms of colchicine overdose, due to its slow metabolism and excretion.

In the treatment of colchicine intoxication, gastric lavage should be performed at the early period following ingestion, and then activated charcoal should be administered. These patients should be closely monitored under intensive care settings. In the present case, severe gastrointestinal and hematological disturbances developed. Although we do not know the exact dose of colchicine ingested by this patient, fortunately she received an early supportive therapy and recovered completely.

Received 13th December 2005. Accepted for publication in final form 9th April 2006.

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