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CASE REPORT / *OLGU SUNUMU*

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Successfully Treated Severe Colchicine Intoxication in an Adolescent

Başarıyla Tedavi Edilmiş Ciddi Kolşisin Zehirlenmesi Olan Bir Adölesan

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ABSTRACT The contain is extracted from the autumn crocus plant, colchicine that an anti-inflammatory drug. The use of colchicine impairs mobilization and activation of neutrophil and supporting treating from some rheumatological diseases especially in childhood as familial mediterranean fever. Colchicine poisoning is rare but severe drug intoxication that can cause life-threatening multiorgan failure at high doses. In this report, a girl who 15-year-old and has familial mediterranean fever was admitted to a hospital for ingesting 0.47mg/kg colchicine. We treated her successfully receiving plasmapheresis and dialysis. The case of colchicine intoxication is a life-threatening problem requiring close monitoring. All the colchicine intoxication cases should be treated in the pediatric intensive care.
Keywords: Colchicine, adolescent, intoxication, pediatric intensive care

ÖZ İçeriği sonbahar çiğdem bitkisinden (autumn crocus plant) elde edilen kolşisin, bir anti-inflamatuar ilaçtır. Kolşisin kullanımı, nötrofil mobilizasyonunu ve aktivasyonunu bozmaktadır ve özellikle çocukluk çağında ailevi akdeniz ateşi gibi bazı romatolojik hastalıkların tedavisinde kullanılmaktadır. Kolşisin zehirlenmesi, yüksek dozlarda hayatı tehdit eden çoklu organ yetmezliğine neden olabilen nadir fakat ciddi bir ilaç intoksikasyonudur. Bu olguda, 15 yaşında ailesel akdeniz ateşi tanılı bir kız çocuğu 0.47mg/kg kolşisin alması nedeniyle hastaneye yatırılmıştır. Plazmaferez ve diyaliz ile hastamızı başarıyla tedavi ettik. Kolşisin intoksikasyonu olgusu, yakın takip gerektiren ve yaşamı tehdit eden bir durumdur. Kolşisin intoksikasyon olgularının tamamı çocuk yoğun bakımda tedavi edilmelidir.
Anahtar Kelimeler: Kolşisin, adölesan, zehirlenme, çocuk yoğun bakım

Introduction

The contain is extracted from the autumn crocus plant, colchicine that an anti-inflammatory drug. The use of colchicine is impairing mobilization and activation of neutrophil and supporting to treat from some rheumatological diseases especially in childhood as familial mediterranean fever (FMF) (1,2). Colchicine poisoning has severe complications that can occur after ingestion. Accidentally or suicidally using overdose, must be closely monitoring and treatment in intensive care unit because of high risk of mortality (3). In our case report, we present successfully treated severe colchicine intoxication ingested in fatal dosages with observed all phases of intoxication.

Case Report

A previously diagnosed FMF patient 15-year-old and 60-kg- weight girl was admitted to the pediatric emergency department after ingesting 56 of her colchicine tablets which each of the 0,5 mg. After questions about her medical history, it has been learned that she ingested

these tablets before 24 hours. At the time of admission, she had a nausea and stomach ache and her heart rate was 102/min, respiratory rate 12/min, blood pressure 102/57(69)mmHg. Glasgow coma scale (GCS) was 15. Her body temperatures were 36.5 ^{0}C, oxygen saturation 100% in room air, capillary refill time was under 2 seconds. There was no abnormal finding in her skin, extremities, chest and abdomen. Arterial blood gas examination, pH:7,30 pCO_2:32 HCO_3:16,3 Lactate:3.6 and additional blood test results were as follows: her complete blood count (CBC) white blood cell (WBC) was 19.600×10^3/mm^3, her haemoglobin (Hb) was 9.4g/dl, total platelet (Plt) count was 156×10^3/mm^3; serum urea/creatinine was 44/1.11mg/dl, serum sodium/potassium (Na/K) was 139/3.9mEq/L, aspartate transaminase/alanine aminotransferase (AST/ALT) was 49/36U/L, glucose was 150mg/dl, International Normalized Ratio (INR):2.6, prothrombin time (PT):29seconds(sec), activated plasma thromboplastin time (APTT):46.7sec, creatine kinase (CK):560U/L and lactate dehydrogenase (LDH):3600U/L. The patient was admitted to pediatric intensive care (PICU) for close monitoring and treatment. Because of the fatal dosage of colchicine tablets ingestion (0.42mg/kg), we planned high volume plasmapheresis and then beginning continuous veno venousus hemodiafiltration (CVVHDF). In the 40th hour of CVVHDF, anemia, neutropenia and thrombocytopenia were developed and excessive menstrual bleeding occurred. Appropriate blood product support was provided and prophylactic broad-spectrum antibiotics were started. Daily intermittent hemodialysis was begun for four days. On the 7th day of admission agitation, hypertension, and then seizure was occurred. Her brain computed tomography (CT) was normal but her magnetic resonance (MR) scanning reported that bilateral asymmetrical cortical-subcortical pathological signal changes are observed in the bilateral posterior parietal and occipital regions. It was evaluated in favor of posterior reversible encephalopathy syndrome (PRES) (The remarkable appearance of the lesions is detected on her cranial MRI scanning in Figures.1 and 2). Antiepileptic and antihypertensive treatment were begun. On the 12th day admitted to PICU, her coagulopathy, renal and hepatic failure, bone marrow suppression findings and neurological symptoms completely healed, but alopecia developed, she was given to general pediatrics.

Discussion

Colchicine poisoning is a rare but severe drug intoxication because of fatality. It can cause life-threatening multiorgan failure at high doses. Especially who had a treatment for their rheumatological diseases are used colchicine and suicidally ingested. The half-life of colchicine has a 9-16-hour and the therapeutic index is narrow (4).

In literaturally, it has been reported, minor toxicity like mild gastrointestinal system (GIS) symptoms developed with <0.5mg/kg. The dosage from 0.5 to 0.8mg/kg results of oral intake has a major toxicity with myelosuppression and

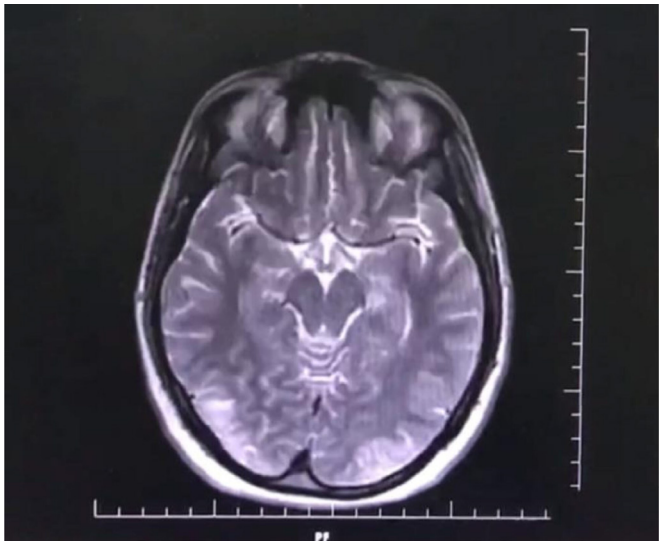

Figure 1. T2W scanning

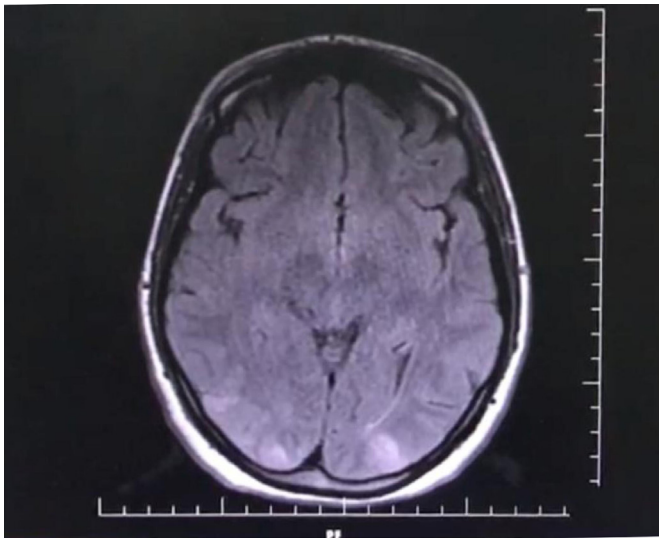

Figure 2. FLAIR scanning, the remarkable appearance of the lesions is detected on cranial magnetic resonance scanning, bilateral asymmetrical cortical and subcortical T2W/FLAIR pathological signal changes are observed in the bilateral posterior parietal and occipital regions

multiorgan failure, so >0.8mg/kg can be lethal (4,5). Mortality is correlated with the timing of drug ingestion and admission time of hospital (6). The prognosis of colchicine intoxication is associated with ingestion dose and the admission time after ingestion. In the adults studies was reported that, under 0.5mg/kg ingestion dose patients can be recovered 100%. On the other hand in the literature, the children who ingested 0.37 and 0.6 have died (7, 8). Our patient ingested 0.47mg/kg colchicine 24 hours before admission and she had severe effects on organs during all the phases of intoxication. Although these effects we treated her successfully without any persistent disease.

Acute colchicine poisoning has three clinical phases which are likely to include all the clinical phases of our patient. The 1st phase which in first 24 hours after drug ingestion includes: gastrointestinal symptoms, hypovolemia, hypotension and leukocytosis. In the 2nd phase, (1-7 days) multiple organ failure occur (cardiac, neurological, repiratory and renal). In this phase unconsciousness, hematologic problems and disseminated intravasculary coagulopathy, ion imbalances, metabolic acidosis, dysrhythmias, and systemic collapse can be seen. The supportive management is important for the good outcomes. After second phase, if the patient lives, in the third phase is observed getting better of organ failure in 3 to 4 weeks from ingestion of colchicine (9).

The case of colchicine intoxication is a life-threatening problem requiring close monitoring. All of the colchicine intoxication cases should be treated in the PICU. Because of not having effective antidote, supportive treatment is recommended. Gastric lavage and activated char coal administration is recommended in the first 60 min from ingestion. If shock and multiorgan failure are developed, it can be given fluid resuscitation and inotropic agents (5). Although hemodialysis and hemoperfusion treatments are ineffective because of extensive volume distribution, if it is necessary, plasma exchange and CVVHDF can be initiated (2,10). In our case report, although she was late for elimination treatment because of the late hospital admission time, we treated her successfully with plasmapheresis, continuous hemodiafiltration, and then intermittent hemodialysis.

Posterior reversible encephalopathy syndrome is a clinical and radiological diagnose with acute neurological symptoms like headache, epileptic/nonepileptic seizures and some different neurological deficits (11). It is reported that the mechanism of that is a problem of dysregulated perfusion. Many studies suggest up to 55% of these have renal failure and hypertension (12). Our case had a FMF before intoxication and this disease may be caused proteinuria and cellular renal effects, but we did not have any data certainly which can trigerred secondary hypertension. The aim of initiating plasmapheresis, CVVHDF and intermittent hemodialysis in this case was drug elimination, there was no sign and symptoms about new developed and/or past history of renal failure.

Colchicine poisoning is a rare but high mortality drug intoxication. It can cause life-threatening multiorgan failure at high doses. Mortality is correlated with the timing of drug ingestion and admission time of hospital. Although hemodialysis and hemoperfusion treatments are ineffective because of extensive volume distribution, if it is necessary, plasma exchange and CVVHDF can be initiated.

Ethics

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: H.F.A., B.K., Concept: H.F.A., M.A., Design: H.F.A., M.A., Data Collection and/or Processing: B.K., Analysis and/or Interpretation: B.K., Literature Search: M.A., Writing: H.F.A., M.A.

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