

Delirium Due To Anthelmintic Drug Overdosage: Case Report

Antihelmintik İlaç Aşırı Alımına Bağlı Deliryum: Olgu Sunumu

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Abstract

A sixty-four year old male patient was admitted to the emergency department with anthelmintic drugs poisoning. Although it is stated in the literature that neurotoxic effects could be seen in therapeutic doses of piperazine hexahydrate and levamisole HCl, acute neurotoxic adverse effects and delirium due to an over dosage were not reported. In this case report, we present the development of delirium due to accompanying overdosage of three anthelmintic drugs. On the 9th day of treatment the patient was discharged from the emergency department with complete recovery.

Key Words: **Delirium; Levamisole; Piperazine.**

Özet

Altmış dört yaşında erkek olgu, antihelmintik ilaç alımı sebebiyle acil servise getirildi. Literatürde; piperazine heksahidrat ve levamisol HCl'nin tedavi dozlarında nörotoksik etkileri bildirilmesine rağmen, aşırı alıma bağlı akut nörotoksik etkileri ve deliryum bildirilmemiştir. Olguda aynı anda üç farklı antihelmintik ilacın aşırı alımına bağlı deliryum gelişmiştir ve olgu, tedavinin dokuzuncu gününde tamamen iyileşerek taburcu edilmiştir.

Anahtar Kelimeler: **Deliryum; Levamisole; Piperazin.**

Introduction

Poisoning due to anthelmintic drug over dosage is seen very rarely. However, adverse effects that are seen in therapeutic doses and over dosages are well known. Piperazine hexahydrate and levamisole HCl are anthelmintic drugs that are used in human and animals. Oxyclozanide is used only in animals (1, 2). Although it is stated in the literature that neurotoxic effects could be seen in therapeutic doses of piperazine hexahydrate and levamisole HCl, acute neurotoxic adverse effects and delirium due to their over dosage were not reported. In this case report, development of delirium due to accompanying non-intentional over dosage of three anthelmintic drugs was presented.

Case report

A sixty-four year old male patient was admitted to the department of emergency medicine with anthelmintic drug poisoning. The patient was conscious and his blood pressure was 140/100 mmHg; heart rate, 100/min; respiration rate, 16/min and body temperature, 37.5 °C. In his neurological examination, the patient was agitated, confused, disorientated and had incoherent speech, nonsensical speech, hallucinations. He had no other physical examination findings.

It was learned from his history that 12 hours before presentation to the department of emergency medicine, he had taken 100 mL of piperazin hexahydrate (800 mg/5 mL) (Helmipar[®], Saba Pharma, Istanbul, Turkey) and 2 tablets of levamisole HCl + oxyclozanide (Nilzan[®], Sanofi Dogu Pharma, Istanbul, Turkey), which he used to treat animals before, for treatment purposes. His relatives told that after taking the medicine he slept and when he woke up, he did not know any of them and talked nonsensical.

In the department of emergency medicine, he was monitorized and oxygenised and blood samples were taken. He was treated symptomatically with intravenous fluid support. Because he came to the emergency department 12 hours after the intake, gastric lavage was not performed but activated charcoal was given. On his electrocardiography, he was tachycardic and rhythm was sinus. In his complete blood count, white blood cell count was $10.46 \times 10^3/\mu\text{L}$, hemoglobin was 17.3 g/dL, and platelet count was $225 \times 10^3/\mu\text{L}$. On the biochemical evaluation, Glucose was 122 mg/dL (normal range: 70-110), total bilirubine was 1.72 mg/dL (0.3-1.2), lactate dehydrogenase

was 172 U/L (100-190), creatine kinase MB was 221 U/L (2-20). Computed tomography of the brain was normal. He was consulted by a neurologist and diagnosed with delirium due to these three drugs' over dosage. During the 5th day of follow-up, total bilirubine, lactate dehydrogenase and creatine kinase MB values increased (Total bilirubine: 2.38 mg/dL, lactate dehydrogenase: 791 U/L and creatine kinase MB: 196 U/L) and then started to decrease. Computed tomography of the brain in the 6th day was also normal. He had improved significantly on day 7 and his symptoms was back to the normal on day 8. The patient was observed over a day to be sure there would be no relapse. In the 9th day of treatment, he was conscious and his neurological examination was completely normal. Then he was discharged from the emergency department with complete recovery.

Discussion

Poisoning cases due to anthelmintic drug over dosage are seen very rarely in the emergency departments. Their adverse effects in the therapeutic doses were reported in the literature but number of cases of acute over dosage is very small. Over dosage of three different anthelmintic drugs at the same time has not been reported.

It was known that piperazin hexahydrate and levamisole HCl had neurotoxic effects. In the therapeutic doses of piperazine hexahydrate; ataxia, tremor, choreiform movements, muscle weakness, hyporeflexia, myoclonus, paresthesia, nystagmus, EEG abnormalities, central nervous system side effects, blurred vision, paralytic strabismus and cataract can be seen (3, 4). Three different poisoning cases were reported in hemodialysis patients due to therapeutic doses of piperazine hexahydrate. In two of them, encephalopathy had developed due to this agent (3, 5). In the literature, no poisoning case has been reported due to over dosage of piperazine hexahydrate since 1965.

Levamisole HCl, an anthelmintic drug with immunomodulating properties, is used in treatment of various diseases. Levamisole HCl, in therapeutic and high doses, can cause hypersensitivity that was also reported in some case reports (1, 2). It was also reported that psychosis had developed in a patient using levamisole HCl (6). El Kallab and colleagues had reported two encephalopathy cases in cancer patients using e of levamisole HCl for immunomodulatory purposes (7).

Oxyclozanide is a salicylanilide anthelmintic, used for the treatment and control of helminthic infections in cattle, sheep and goats. Oxyclozanide is not used as human medicine (8).

In our case, the patient had taken piperazine hexahydrate and levamisole HCl +oxyclozanide to treat himself. We think that development of delirium symptoms in our case was due to over dosage of piperazine hexahydrate and levamisole HCl.

For all of three drugs, symptomatic treatment was applied to the patient that was the situation for their recommended over dosage treatment.

We thought that taking three different anthelmintic drugs at the same time and very high doses, developing of delirium symptoms, and using one of them for therapeutic aims in animals only are the most important side of the present study.

Limitations of the study. The most important limitation of our case was that we did not perform electroencephalographic examination. We believe that if a patient admits to the emergency department due to anthelmintic drug over dosage and unconsciousness, electroencephalographic examination must be performed.

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