

# Suicide Attempt with Paliperidone Overdose: A Case Report

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## ÖZET:

Aşırı dozda paliperidon ile intihar girişimi: Bir olgu sunumu

İntihar şizofreni hastalarında sık karşılaşılan bir problemdir. İntihar girişiminde bulunmanın en çok kullanılan yollarından birisi yüksek dozlarda ilaç alımıdır. Yeni kullanıma girmiş bir atipik antipsikotik olan paliperidon ilacından 243 mg alarak intihar girişiminde bulunmuş ve acil servise huzursuzluk, ajitasyon, hafif konfüzyon ve dezorganize davranış ile başvurmuş bir şizofreni olgusu sunulmuştur. Hastanın gastrik lavajı, hidrasyonu ve yoğun bakım ünitesindeki 72 saatlik monitorizasyonu sekelsiz bir şekilde sonlanmıştır. Güncel literatürde yer alan sınırlı veriye ek olarak olgumuzun klinik seyri paliperidonun aşırı dozlarının görece güvenli olduğu izlenimini vermektedir.

**Anahtar sözcükler:** Paliperidon, intihar, atipik antipsikotik, şizofreni, aşırı doz, zehirlenme, entoksikasyon

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## ABSTRACT:

Suicide attempt with paliperidone overdose: a case report

Suicide is a common problem seen in patients with schizophrenia. Taking overdoses of drugs is a well-known way for committing suicide. We report a case with schizophrenia, who attempted suicide with 243 mg. of paliperidone, a recently marketed atypical antipsychotic, and admitted to our emergency service with restlessness, agitation, mild confusion, and disorganized behavior. Gastric lavage, hydration, and 72 hours monitorization of the patient in intensive care unit ended without any sequelae. Our case, in addition to the limited available data, suggests paliperidone is a relatively safe drug in its overdoses.

**Key words:** Paliperidone, suicide, atypical antipsychotic, schizophrenia, overdose, intoxication

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## INTRODUCTION

Suicide among schizophrenia patients is one of the main problems encountered by the physicians in their daily clinical practices. Studies in the literature suggest that 10-13% of schizophrenic patients die by suicide (1). One usual way of schizophrenic patients for attempting suicide is taking overdoses of drugs which they can easily access. Thus, among these patients an acute intoxication with one of the psychotropic drugs on the market may be expected. Paliperidone, the major active metabolite of risperidone, is one of the recently marketed drugs for schizophrenia treatment (2). Paliperidone and risperidone have some similar receptor affinities and clinical effects on schizophrenic patients. However, we were unable to find any published report about acute paliperidone intoxication after a comprehensive search in PubMed database. Here, we present an acute paliperidone intoxication of an adult suffering from schizophrenia.

## CASE REPORT

Mrs. Y, a 24 years-old woman with the diagnosis of schizophrenia, was admitted to our emergency service with restlessness, agitation, mild confusion and disorganized behavior. She was on paliperidone 3 mg/day maintenance treatment for her psychotic symptoms over last 6 months. Following an anger outburst she consumed 81 tablets of paliperidone 3 mg. in an attempt to end her life and within 6 hours she was brought to our emergency service. There was no history of any other concurrent drug overdose. Measurement of vital signs revealed mild hypertension (150/95 mmHg), and tachycardia (127 bpm). Initial examination showed restlessness, agitation, akathisia, mild confusion, loss of time and place orientation, mildly increased spontaneous speech and thought process, delusions and disorganized behavior. Routine hematology, biochemistry, chest x-ray and blood gases were normal other than mildly elevated creatine

kinase level (475 U/L). Sinus rhythm and ventricular extrasystoles with no QTc prolongation were observed in her initial ECG. After a single dose of oral activated charcoal and gastric lavage, she was kept in intensive care unit for intravenous hydration with saline and monitorization during the following 72 hours. Within 12 hours of admission, her arterial blood pressure and heart rate had decreased to 135/85 mmHg and 93 bpm, respectively. Control ECG revealed normal sinus rhythm without any pathology. After 48 hours observation in the intensive care unit she was transferred to psychiatry inpatient clinic with a clear consciousness, intact orientation, and no restlessness, agitation, confusion or ECG pathology, but mildly increased spontaneous speech, delusions, and disorganized behavior. She carefully and gradually put on intramuscular zuclopenthixol decanoate 200 mg per 15-days, oral olanzapine 20 mg/day and biperiden 4 mg/day treatment for schizophrenia. After achieving a reasonable partial remission of her symptoms at the end of 7 weeks treatment she was discharged.

## DISCUSSION

As far as we know this is the first report on suicide attempt with paliperidone in a schizophrenia patient. The amount of paliperidone, 243 mg, taken by our case can be considered as very high. It was approximately 20 times more than the maximum recommended daily dose which is 12 mg per day (3).

In the FDA pre-marketing database two mortality cases are reported under paliperidone treatment (4). Since both of those patients were also under some other medications the relationship between causes of death and the use of paliperidone remained unclear. According to the Drug Information Guide, common symptoms with paliperidone

overdose may include drowsiness, sedation, QTc prolongation, hypotension, unsteadiness, and unusual body movements (5). There is only one post-marketing report of paliperidone overdose which presents a 28 years old male who had started to self-medicate with triple prescribed doses of 9 mg of paliperidone during the previous 3 days of his admission (6). That patient presented with mild symptoms like restlessness, agitation, tachycardia, and hypertension. Although, our patient presented with very similar symptoms she also had some more severe symptoms like mild confusion and disorganized behavior. Restlessness, agitation, and akathisia may be due to paliperidone's dopamine receptor 2 (D2) and serotonin receptor 2 (5-HT2) blockade, while the confusion may additionally attributed to its histamine 1 (H1) receptor blockade effect (7). Her cardiovascular symptoms like tachycardia, hypertension, and ventricular extrasystoles seem to be due to alpha-2 adrenergic receptor blockade (8).

Paliperidone intoxication is managed by appropriate supportive measures because there is no known specific antidote of it. Management includes gastric lavage and administration of activated charcoal and a laxative, maintaining airway and ensuring adequate ventilation and oxygenation, and continuous cardiovascular monitoring. The half-life of paliperidone may extend up to 20-30 hours in poor metabolizers (9). Thus, supportive care of our patient in the intensive care unit lasted 72 hours until her transfer to our psychiatric ward.

Although the available data about paliperidone overdose or intoxication is very limited, according to current reports and our case it may be regarded as a relatively safe drug in its overdoses. Further case reports and research if possible, would improve our understanding about safety of this novel atypical antipsychotic drug.

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