

# Benzydamine Abuse as a Hallucinogen: A Case Report

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## ÖZET:

Halüsinogen amaçlı benzidamin kötüye kullanımı: Olgu sunumu

Benzidamin hidroklorid, analjezik, antipiretik ve antimikrobiyal özellikleri olan non-steroid antiinflamatuvar bir ilaçtır. 500 mg ve üstü dozlarda halüsinojenik etkisi nedeniyle eğlence amaçlı kötüye kullanıldığı bilinmektedir. Bu yazıda çoklu madde kötüye kullanımı nedeniyle yatırılan 22 yaşında erkek hastanın beraberinde benzidamin kötüye kullanımı da olması nedeniyle sunulması amaçlanmıştır. Benzidaminin internette popüler hale gelmesi, ucuz olması ve özellikle reçetesiz olarak kolayca elde edilebilir oluşu kötüye kullanımını destekleyen etkenler olarak görülmektedir.

**Anahtar sözcükler:** Benzidamin, ilaç kötüye kullanımı, halüsinasyon

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## ABSTRACT:

Benzydamine abuse as a hallucinogen: a case report

Benzydamine hydrochloride is a non-steroidal anti-inflammatory drug which has analgesic, antipyretic and antimicrobial properties. It is known that benzydamine is abused for recreational use due to its hallucinogenic effect at dosages over 500 mg. We have to reported a case of a 22 year-old male patient hospitalized because of multiple substance abuse together with benzydamine abuse in this paper. It seems that factors such as its popularity through internet discussion groups, its low-cost and the ease of obtaining the drug without a prescription are favoring its abuse.

**Key words:** Benzydamine, drug abuse, hallucination

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## INTRODUCTION

Benzydamine hydrochloride [N,N-dimethyl-3-(1-benzyl-1H-indazole-3-yloxy)-1-propanamine] is a non-steroidal anti-inflammatory drug (NSAID) with analgesic, antipyretic and antimicrobial properties (1). Benzydamine, derived from indole acid, is often used topically to treat lesions of the oral mucosa (2). In addition, it has a place in the treatment of sore throat, inflammation of soft tissue, skin and joints, with negligible side effects when used locally (3). Its coated tablet, spray-gargle and gel forms are available in Turkey under different trade names and the coated tablet form which is the subject of this paper has a very low price.

It is known that benzydamine is rapidly absorbed

from the gastrointestinal tract after oral administration, its plasma half-life is approximately 8 hours and it is excreted in the urine and feces, whereas skin and mucosal absorption of the drug is low (<10 per cent of the dose) after topical application (4). It is suggested that its anti-inflammatory activity is related to its membrane-stabilizing effect and inhibition of synthesis of tumor necrotizing factor-alpha (2).

The first and only epidemiological study in the literature (PubMed, Science Direct and Google Scholar were scanned) about recreational abuse of high doses of benzidamine was published in Brazil (5). There are a limited number of case reports in the literature other than our case. The first case reported is a 20 year old male experiencing various

visual illusions and hallucinations after taking 400-1000 mg benzydamine with alcohol (6). In the second case, published by Gomez-Lopez et al. (7), a 6-year-old girl was accidentally poisoned with 500 mg benzydamine and experienced visual and tactile hallucinations, which started 4 hours after poisoning and remitted spontaneously. Another case is reported in Poland. Hyperactivity, excitation, visual hallucinations and muscle weakness emerged after 22-year-old male orally ingested a vaginal preparation including 500 mg benzydamine based on information he had obtained from the internet (8).

When the Turkish literature was scanned, we did not see any reports of high dose benzydamine abuse. However, in a case with a diagnosis of schizoaffective disorder, hallucinosis, dysphoria, and paranoid preoccupations, which disappeared after 5 days of discontinuation of the drug, were reported after taking benzydamine for an orthopedic problem at a therapeutic dosage (150 mg/day) (9).

In this paper, benzydamine abuse is discussed within the framework of a case with a history of multiple substance abuse.

## CASE

A 22 year old, high school graduate, single male without a regular job was hospitalized with the diagnosis of "Multiple Substance Abuse". We learned from the patient's history that he began to abuse drugs four years previously with ecstasy (5-methoxy-3,4-methylenedioxyamphetamine); then he continued his substance abuse with cannabis, alcohol, clonazepam and volatile substances. It was noted that he had been hospitalized twice for short-terms in psychiatry services of other centers because of previous suicide attempts, but he had not sought treatment for substance abuse. According to his psychiatric examination when he was admitted to the clinic; his self-care and hygiene was adequate, he was cooperative with the physician and appeared slightly sedated. The tempo and rhythm of his speech was reduced, his thoughts were logically

associated and goal directed. In the content of his thought there was referential preoccupations, such as that people were looking at him and making malicious gossip about him. He was describing a visual illusion that he had touched a man waiting in the queue and called him "Dad!" at the hospital. The patient described his experience as "relaxation, relief and being high". Electroencephalography, computed tomography, plasma B12 and folate assays, complete blood count, urinalysis and liver-kidney-thyroid function test findings were all normal. According to the substance analysis in the urine, cannabinoids, amphetamines, barbiturate, ecstasy, cocaine and opioids were found to be negative and benzodiazepines were found to be positive. This finding was attributed to 18 mg clonazepam he had taken two days ago. He stated that he hadn't used cannabinoids, ecstasy or volatile substances for two weeks and this information was consistent with the results of the urinalysis.

The symptoms had started approximately half an hour after the high dose of benzydamine intake; the symptoms such as visual illusions and referential preoccupations resolved spontaneously three hours after beginning and relaxation and relief resolved after about 4 hours. We learned from the patient's anamnesis that he had taken 15 coated tablets including 50 mg benzydamine with 500 ml of beer before he came to the hospital and the symptoms had started after this ingestion.

He stated that he obtained the information about benzydamine from a friend, whom he met on the internet, where experiences related to substance use and psychiatric problems are shared and added that his friend informed him about benzydamine intake resulting in a "high", a feeling of calm and leading to hallucinations. He reported that he had taken 15 coated tablets (750 mg) two years ago for the first time; afterwards he had seen symmetrical geometric figures on the wall, had experienced a feeling of being followed, had thought that there had been someone in the house and therefore frequently checked the kitchen, had thought that aliens were watching him and had insomnia. He remarked that he had taken the drug four times so

far and hadn't seen any effect except relaxation when he had taken 10 pills for the second time. He added that he had taken the pills with beer at the hospital for the fourth and last time. The patient, whose symptoms were related to benzydamine, improved spontaneously and was transferred to the relevant service for addiction treatment. Informed consent about the publication of this article was taken from the patient.

## DISCUSSION

Benzydamine hydrochloride is quite vulnerable to abuse as it is a easily accessible and inexpensive NSAID even though it is a prescribed medication. This is the first report in the Turkish literature and we think that it is important, so that we scanned the search engines and determined that people had described their experiences in detail about high dose benzydamine abuse and suggested its use in many web sites, various dictionaries and forums. Our case also reported that he had obtained the information from a friend, whom he had met on the internet and then he had decided to try it. The factors making benzydamine easier to abuse are considered to be its low cost, popularity on the internet and accessibility (5). The impact of the internet on benzydamine abuse has become a current issue in Brazil (10), similar to our country. In Turkey where the public's mental health is becoming more important, we report this case to draw benzydamine abuse to the attention of health professionals. The psychostimulant effects of benzydamine are known to start at doses of 500 mg

and higher, but the mechanism of the hallucinogenic effects is still not known (5). Being synthesized starting from indazol may explain the occurrence of hallucinations because of the chemical similarity to the indole chemical structure existing in serotonin. It is speculated that the structural similarity between benzydamine and serotonin may be translated into a serotonergic action such as the agonistic activation of 5HT<sub>2A</sub> receptors. It is known that several indole groups, such as diethylamine in lysergic acid and dimethyltryptamine, cause hallucinations based on this mechanism (5,6,11).

According to the data obtained from epidemiological studies carried out in Brazil, most cases use different substances including alcohol and cannabis to strengthen the impact of benzydamine similar our case. The most common effects reported by abusers are hallucinations and nonspecific sensorial experiences described as a "trip". In most cases, benzydamine was purchased from a pharmacy without a medical prescription (5). The danger becomes even more striking when we consider how easy it is to purchase drugs without a prescription in Turkey and that we do not know the potential longitudinal negative effects of benzydamine abuse.

In conclusion, the prevalence of benzydamine abuse in Turkey, the mechanism of psychotropic effects and the longitudinal outcomes of its abuse are potential topics for future research. Considering the potential danger, we suggest benzydamine should not be sold without control, to reduce the incidence of its abuse.

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