Case Study

Delirium due to Datura Stramoniun Ingestion: A case report

Abstract

Introduction

Datura stramonium; known as devils apple or tatula in our country is a plant known member of a belladonna alkaloid family contains atropine, hyosyamine and scopolamine having hallucinogenic and anticholinergic effects. In our study we described a case presented by delirium to our emergency department later diagnosed as Datura stramonium poisoning.

Presentation of Case

19 years old male patient brought to our ER by his relatives with the complaints of altered mental status, yelling, and meaningless speech. Previously healthy patient whom had no chronic conditions; was conscious at the time of his presentation but place, time, person orientation was altered with no cooperation. To case further harm caused by him to himself and environment 2 mg physostigmine were administered. After further monitorisation for 8 hours patient were discharged safely.

Discussion and Conclusion

Turkey has a large plant flora and Turkish people are traditionally more prone to usage of herbal medicine. Also substance abuse is a growing problem in our country

***KEY WORDS*:** Datura stramonium, delirium, physostigmine, Emergency department

INTRODUCTION

Datura stramoniumun (DS) is a common plant found in all regions of Turkey especially in Central Anatolia. Known commonly as pipe flower, garden clove, magic herb, jinn herb, stinking herb, devil's apple, tatula. This plant is about 20-100 cm height, stiff stemmed, 7-14 branched, and has green fruits around 3-4 cm containing black seeds. DS flowers have a shape of cone usually white colored (Figure 1). All parts of plant contains variable amounts of belladonna alkaloids namely atropine, hyosyamine and scopolamine. Mainly seeds of the plant contain high concentrations of atropine. DS is commonly used as an herbal medicine traditionally to treat asthma, bronchitis, hemorrhoids, eczema; moreover has an important part in drug industry [1,2].

CASE

19 years old male patient brought to our ER by his relatives with the complaints of altered mental status, yelling, and meaningless speech. Previously healthy patient whom had no chronic conditions; was conscious at the time of his presentation but place, time, person orientation was altered with no cooperation. Deeply agitated; patients vitals were recorded as tension arterial; 142/75 mmHg, heart rate; 122/min, fever; 37,5^{o}C breath rate; 20/dk.ECG shows sinus tachycardia without any abnormal morphology. His pupils were isochoric with bilateral mydriasis. Skin and mucous membranes were dry, Intestinal motility was hypoactive. Complete blood count, renal and liver function tests and arterial blood gas analysis and ph were within normal range. In the light of these signs and symptoms anticholinergic toxidrome was suspected and only supportive therapy was started. Due to patient's general medical condition and consciousness level gastric lavage was not performed and active coal was not

administrated due to aspiration risk. For symptomatic treatment of agitation 10 mg midazolam was administrated intravenously. Agitations were ceased and reoccurred in a brief period. Further story exposed that patient had consumed ‘’devils apple” for entertainment about 4 hours ago. National Referral Centre for Poisoning was called for further information and treatment options. To case further harm caused by him to himself and environment 2 mg physostigmine were administered. Due to known arrhythmogenic and epileptogenic effects of physostigmine patient were monitorised before administration. 2 minutes after administration of physostigmine patient dramatically responded the drug and immediately regained consciousness, also disorientation and incooperation ended very rapidly. After further monitorisation for 8 hours patient were discharged safely.

DISCUSSION

DS is commonly known as Jimson seed [2]. This plant contains atropine, scopolamine, and hyosyamine responsible for anticholinergic effects. Each of the seed contains 0,1 mg atropine. 100 seed contains potentially fatal 6-10 mg atropine [3-6]. Due to potential Psychedelic and euphoric effects on central nervous system, although rare, abuse can be observed in young population as in our case report. Symptoms usually start in 30-60 minutes after oral use. First symptoms are usually hallucinations, dryness in mucosal membranes, dehydration, pupil dilatation, accommodation and speech disorders accompanying tachycardia, urinary retention and ileus. Rarely hyperthermia, respiratory arrest and convulsions can be encountered. Due to decreased gastrointestinal motility toxin elimination is delayed and symptoms may last in 24-48 hours. Treatment of anticholinergic toxidromes is conservative and supportive and specific antidote is physostigmine. Physostigmine can easily pass blood-brain barrier and inhibits anti-cholinesterase enzyme reversibly [7]. Most of the patient’s mental and hemodynamic status

can be managed safely with supportive and benzodiazepine therapy but administration of physostigmine must be considered when patient is hemodynamically unstable due to arrhythmias, respiratory arrest and convulsions resistant to standard therapy. Also physostigmine can be applied if the patient is severely agitated and causes harm to him and environment. Adult dose is 2 mg and must be applied in no shorter than 5 minutes [7,8].

CONCLUSİON

Turkey has a large plant flora and Turkish people are traditionally more prone to usage of herbal medicine. Also substance abuse is a growing problem in our country. When a young patient with delirium is encountered in ER specifying story and physical examination can lead to rare toxidromes as in our case.

REFERANCES

1. Uzun E, Sarıyar G, Adsersen A, Karakoc B, Ötük G, Oktayoglu E, ve ark. Traditional medicine in Sakarya province (Turkey) and antimicrobial activities of selected species. J Ethnopharmacol 2004; 95:287-296.

2. Wiebe TH, Sigurdson ES, Katz LY. Angel's trumpet (Datura stramonium) poisoning and delirium in adolescents in Winni-peg, Manitoba: summer 2006. Paediatr Child Health 2008;13(3):193- 196.

3. Vanderhoff BT, Mosser KH. Jimson weed toxicity: manage-ment of anticholinergic plant ingestion. Am Fam Physician 1992; 46: 526-530.

4. Klein-Schwartz W, Oderda GM. Jimson weed intoxication in adolescents and young adults. Am J Dis Child 1984;138:737-739.

5. Kurzbaum A, Simsolo C, Kvasha L, Blum A. Toxic delirium due to Datura stramonium. Isr Med Assoc J 2001;3:538-9.

6. Parissis D, Mellidis C, Boutis A, Apostolidis K, Ignatiadis M, Kiosses V, Milonas I. Neurological findings in a case of coma secondary 140 to Datura stramonium poisoning. Eur J Neurol 2003;10(6):745-746

7. Wolf LR. Anticholinergic toxicity. İn:Tintinalli JE, Kelen GD, Stapczynski JS (eds). Emergency Medicine: A Comprehensive Study Guide (seventh ed). New York, McGraw-Hill 2010, p 1182–1185.

8. Burns MJ, Linden CH, Graudins A, Brown RM, Fletcher KE. A comparison of physostigmine and benzodiazepines for the treatment of anticholinergic poisoning. Ann Emerg Med 2000; 35:374-381.

Competing İnterest

Authors have declared that no competing interests exist.

Authors' Contributions

'Author BI, MB and MSY' designed the study, wrote the first draft of the manuscript. 'author CK, GK' and 'author AGS' managed the literature searches. All authors read and approved the final manuscript

Figure-1. Datura stramonium