

# Seven Siblings Admitted to Emergency with Datura Poisoning: Cases from Northern Syria

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## Abstract

Datura Stramonium (DS) is a wild and herbaceous plant that grows widely. It contains atropine, hyoscyamine and scopolamine. DS can cause severe poisoning with severe anticholinergic syndrome. Poisoning occurs as a result of its unconscious consumption for healing purposes, abuse due to its hallucinogenic effects or accidental consumption of the plant. The purpose of this study is to discuss the approach to DS poisoning and the treatment modalities of anticholinergic syndrome by presenting the cases of seven siblings who were admitted to hospital with vast variety of anticholinergic symptoms caused by DS poisoning.

**Keywords:** Datura stramonium, poisoning, anticholinergic effects

## Introduction

Datura Stramonium (DS) is a wild and herbaceous plant that grows widely and is popularly called by many different names such as devil apple, pipe flower, jimson grass, abu lily, gin grass, tatula, tatala or pork patina<sup>1</sup>. DS can cause poisoning with severe anticholinergic syndrome and it contains atropine, hyoscyamine, and scopolamine<sup>2</sup>. Anticholinergic symptoms; mydriasis, dry-red skin, hallucinations, agitation, hyperthermia, urinary retention, decreased bowel motility, convulsion, delirium, confusion, speech disorder, hypertension, nausea, abdominal pain, erythema, ataxia, fasciculations, and muscular rigidity<sup>3</sup>. In this article, we aimed to present the clinical information of seven siblings who were admitted to the hospital with different symptoms after eating DS, and two of them were followed up in the pediatric intensive care unit and discharged with recovery.

## Case Reports

Seven siblings aged one to eight years applied to the emergency department of our hospital with various

complaints such as skin symptoms, nausea-vomiting and changes in consciousness about one hour after they ate the plant they found in the garden. It was understood that the plant brought to the hospital by their families was DS (Figure 1).

A 7-year-old female patient had complaints of nausea-vomiting, skin rash, and altered consciousness. On physical examination, she was conscious, and her orientation and cooperation were impaired. Pupillary mydriatic, mucous membranes were dry, and diffuse redness was present on her body, which faded with pressure and was not raised from the skin. Other system examinations were evaluated as normal. Fever: 38 C, heart rate 118/min, oxygen saturation: 98%, respiratory rate: 22/min. Hemogram and biochemistry results evaluated in the emergency department were within normal reference ranges. The patient, who was evaluated as anticholinergic poisoning due to DS consumption, was admitted to the pediatric intensive care unit.

During his intensive care hospitalization, he had a delirium picture including visual hallucinations, meaningless speech, unconscious movements, and spatial and temporal disorientation. Oxygen support, intravenous hydration, and

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**Received:** 19.12.2022 • **Accepted:** 31.03.2023

**Cite this article as:** Tepe M, Karaca B, Çelik B, Yıldırım B. Seven Siblings Admitted to Emergency with Datura Poisoning: Cases from Northern Syria. Eurasian J Tox. 2023;5(1): 20-92

**Table 1:** Age, gender, physical examination and treatment status of the cases.

| Case Number | Age   | Gender | Skin lesion | Neurological sign | Mydriasis | GIS findings | Tachycardia | Hospitalization | Treatment and follow up                      |
|-------------|-------|--------|-------------|-------------------|-----------|--------------|-------------|-----------------|--|
| 1           | One   | Female | +           | -                 | +         | +            | -           | -               | IV hydration and ER follow up                |
| 2           | Three | Female | +           | -                 | +         | +            | -           | -               | IV hydration and ER follow up                |
| 3           | Five  | Female | +           | -                 | +         | +            | -           | -               | IV hydration and ER follow up                |
| 4           | Six   | Female | +           | -                 | +         | +            | -           | -               | IV hydration and ER follow up                |
| 5           | Seven | Male   | +           | +                 | +         | +            | +           | +               | IV Diazepam and hydration and ward follow up |
| 6           | Seven | Female | +           | +                 | +         | +            | +           | +               | IV Diazepam and hydration and ward follow up |
| 7           | Eight | Female | +           | -                 | +         | +            | -           | -               | IV hydration and ER follow up                |

diazepam treatment for his agitations were given, and his symptoms regressed after approximately 24 hours. After 48 hours of follow-up in the pediatric intensive care unit, the patient was discharged with full recovery.

A 7-year-old male patient had complaints of nausea-vomiting, skin rash and altered consciousness. On physical examination, she was conscious, and her orientation and cooperation were impaired. Pupillary mydriatic, mucous membranes were dry, and diffuse redness was present on her body, which faded with pressure and was not raised from the skin. Other system examinations were evaluated as normal. Fever: 37.5 C, heart rate 110/min, oxygen saturation: 97%, respiratory rate: 21/min. Hemogram and biochemistry examination results in the emergency room were within normal reference ranges. The patient, who was evaluated as anticholinergic poisoning due to DS consumption, was admitted to the pediatric intensive care unit.

During his intensive care hospitalization, he had a delirium picture including visual hallucinations, meaningless speech, unconscious movements, and spatial and temporal disorientation. Oxygen supplementation, intravenous hydration, and diazepam treatment for his agitations were given, and his symptoms resolved after approximately 30 hours. After 48 hours of follow-up in the pediatric intensive care unit, the patient was discharged with full recovery.

Abdominal pain and skin findings were prominent in the complaints of the other 5 siblings aged 1 to 8 years. On physical examination, there were diffuse skin rashes that were not raised from the skin, which faded with pressure, and mydriasis. There were no changes in consciousness. Vital signs were within normal ranges. On physical examination, there were no pathological findings other than skin rash and mydriasis. The patients who underwent intravenous fluid therapy and follow-up in the emergency department did not

have any additional complaints after 12 hours of observation and were discharged with recommendations.

## Discussion

The anticholinergic symptoms observed in DS poisoning depend on the atropine, scopolamine and hyosyamine contained in the plant<sup>4</sup>. The first and most specific manifestations of anticholinergic poisoning due to DS toxicity; dryness of the skin and mucous membranes, diffuse skin redness, mydriasis and sinus tachycardia. In more severe cases, it can lead to multiple organ failures and neurological symptoms such as delirium and coma<sup>5</sup>. All of our cases had diffuse skin rashes and findings of mydriasis. Except for two patients who were followed up in the intensive care unit, there were no neurological symptoms.

Poisoning due to Datura Stramonium is mostly caused by the wrong and unconscious consumption of herbal medicine in the cases in our country. It is used orally by people with acne, eczema, and hemorrhoids complaints, and locally by making an ointment by people with muscle and joint pain complaints<sup>1</sup>. DS poisoning seen in western countries is generally caused by abuse in the form of consumption as cigarettes due to its euphoric and hallucinogenic effects in young adults<sup>6</sup>. All of our cases are pediatric patients and there is accidental consumption.

The main treatment in DS poisoning consists of supportive treatment and care. Gastric lavage can be applied in cases admitted in the first hour after ingestion. Activated charcoal is recommended. Benzodiazepines can be given to patients with agitation. Physostigmine, a cholinesterase inhibitor, can be given in resistant cases<sup>7</sup>. Physostigmine easily crosses the blood-brain barrier and reaches peak activity 5 minutes after administration. It can

be given intravenously in doses of 0.5-2 mg, without faster than 1 mg/min. Serious side effects such as hypotension, bradycardia, convulsions and asystole are known<sup>8</sup>. None of our patients had resistant delirium or agitation that would require physostigmine. Most of the cases followed up due to DS poisoning are discharged in less than 48 hours<sup>9</sup>. While 2 of our patients that we followed up in the intensive care unit were discharged within 48 hours, the other 5 patients were discharged after 12 hours of follow-up in the emergency room.

## Conclusion

In conclusion, wild plant poisoning should be considered in all patients presenting to the emergency department with anticholinergic findings and complaints of unknown origin, and patients should be evaluated and questioned in this respect.

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