


## Case report: management of *Phytolacca americana* " dragon berries " poisoning

*Vaka sunumu: Phytolacca americana " Şekerci Boyası" zehirlenmesinin yönetimi*

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### ABSTRACT

*Phytolacca americana*, commonly known as "Phytolacca" in our country, is a toxic plant. A 43-year-old male patient presented to the emergency department with abdominal pain, nausea, vomiting, and chest pain after consuming tea made from this plant. Examination and tests revealed elevated lactate, C-reactive protein, and white blood cells. Supportive treatment was administered, leading to symptom improvement. The literature indicates that all parts of this plant are toxic to humans and mammals, highlighting the importance of early recognition and supportive care. The FDA advises against the use of this plant.

**Keywords:** *Phytolacca americana*, toxidrome, cholinergic syndrome.

### ÖZ

Ülkemizde yaygın olarak "Şekerci Boyası" olarak bilinen *Phytolacca americana* zehirli bir bitkidir. 43 yaşında erkek hasta bu bitkiden yapılan çayı tükettikten sonra karın ağrısı, bulantı, kusma ve göğüs ağrısı şikayetiyle acil servise başvurdu. Muayene ve testler yüksek laktat, C-reaktif protein ve beyaz kan hücrelerini ortaya çıkardı. Destek tedavisi uygulandı ve semptomlarda iyileşme sağlandı. Literatürde bu bitkinin tüm kısımlarının insanlar ve memeliler için toksik olduğu belirtiliyor ve bu da erken teşhis ve destekleyici bakımın önemini vurguluyor. FDA bu bitkinin kullanımına karşı tavsiyede bulunuyor.

**Anahtar Sözcükler:** *Phytolacca americana*, toksidrom, kolinerjik sendrom.

### INTRODUCTION

In our country, the plant known as "Phytolacca" and scientifically named *Phytolacca americana*, grows to a height of 1-3 meters and produces green flowers and purple-colored berries. It is found growing in the Middle East region, including our country (1). This plant, known to be toxic to both humans and dogs, has historically been used in traditional medicine and has been the subject of some biomedical research (2). The *Phytolacca americana* plant grows in various regions of Turkey. This herbaceous plant, found

at altitudes between 0-500 meters, is typically located at the foothills of mountains and within fields and shrubs. According to a study conducted in our country, it has been reported that this plant is collected in the Black Sea region (Ordu, Rize, Giresun), the Marmara region (Istanbul), and the Mediterranean region (Antalya). As demonstrated in this study, it has a widespread habitat in Turkey (Figure-1) (1). This text will discuss the conditions observed after the consumption of "Phytolacca" which exhibits toxic effects in humans.

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Application date: 10.06.2024 Accepted: 30.09.2024



**Figure-1.** *Phytolacca americana*.

## CASE

A 43-year-old male patient presented to the emergency department with complaints of abdominal pain, nausea, vomiting, and chest pain after drinking tea made from the *P. americana* plant. Upon admission, the patient was conscious, cooperative, and oriented, with a Glasgow Coma Score of 15/15. The patient's medical history revealed no chronic diseases or known allergies. At the time of admission, the patient's systolic blood pressure was 124 mmHg, diastolic blood pressure 80 mmHg, pulse 107 beats per minute, and partial oxygen saturation 98%.

Physical examination of the patient revealed no pathological cardiac murmurs, and breath sounds were normal. Abdominal auscultation indicated rapid bowel sounds and tenderness without defense or rebound tenderness. During follow-up, the patient's electrocardiogram showed a normal sinus rhythm at 99 beats per minute, with no ST changes. Blood tests showed an increase in lactate (3.2 mmol/L), elevated C-reactive protein (23.39 mg/L), and leukocytosis ( $16.51 \times 10^9/L$ ) with a left shift (88.8% neutrophils). No significant changes were observed in coagulation parameters or troponin levels.

During follow-up, the patient experienced nausea, vomiting, and fecal incontinence. A brain computed tomography scan revealed no significant findings. Due to the existing symptoms and irritability, supportive treatment was initiated.

A proton pump inhibitor (pantoprazole 40 mg) and metoclopramide 10 mg were administered, and hydration was ensured. The patient, primarily presenting with cholinergic symptoms, was hospitalized for observation. During follow-up, no changes were observed in biochemical values, and the patient's symptoms subsided. The patient was discharged with a recommendation for outpatient follow-up.

## DISCUSSIONS

A review of the literature indicates that this plant, with toxic effects in all parts, frequently causes poisonings primarily in its native region of the Americas (3-5). "*Phytolacca*" which exhibits toxic effects on various mammalian species including humans, primarily shows cholinergic effects in our case as well (3). In an observational study, it was frequently observed that poisoning occurred predominantly in males and ended tolerably. Additionally, the most common findings were gastrointestinal symptoms. Cutaneous symptoms were also observed. Supportive treatment is an important follow-up parameter for this patient group, which showed good results during follow-up (4).

The primary treatment for such cases is supportive care. Despite being listed by the U.S. Food and Drug Administration (FDA) as a substance to be cautious with and avoided (6), this plant and its extracts are known to grow in our country. Consumption of this plant can result in cases ranging from asymptomatic to fatal. Early recognition and initiation of supportive treatment are crucial.

**Ethical Approval:** Ethics Committee approval is not required as is a case report. Informed consent has been received from the patient.

**Conflict of interest:** Authors declared no conflict of interest.

**Financial Disclosure:** Authors declared no financial support

## References

1. Özbucak T, Sağlam A. *Phytolacca americana* L. bitkisinin farklı habitatlardaki azot ve fosfor makro element değerlerinin karşılaştırılması. *Ordu Univ Bilim Teknol Derg.* 2021;11(2):113-123.
2. Fahmy NM, El-Shazly M, Farag MA, Ahmed AMA, Kamel MS. Chemical exploration of different extracts from *Phytolacca americana* leaves and their potential utilization for global health problems: in silico and network pharmacology validation. *J Biomol Struct Dyn.* 2024:1-21.
3. Valle E, Vergnano D, Nebbia C. Suspected pokeweed (*Phytolacca americana* L.) poisoning as the cause of progressive cachexia in a Shetland pony. *J Equine Vet Sci.* 2016;42:82-87.
4. Woolum JA, Spiller HA, Casavant MJ, Chounthirath T, Smith GA. Human exposures to *Phytolacca americana* in Kentucky. *Toxicon.* 2022;220:106962.
5. Jaeckle KA, Freemon FR. Pokeweed poisoning. *South Med J.* 1981;74(5):639-40.
6. U.S. Food and Drug Administration (FDA). Warning letter [Internet]. 2017 [cited 2024]. Available from: <https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/duncans-botanical-products-inc-519077-05082017>