

## CASE REPORT

# Acute Hepatitis Associated with Intake of Pistacia Vera L. Bud Tea; a Case Report

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**Abstract:** In this study, a patient who developed acute hepatitis due to drinking Pistacia vera L. bud tea is presented. A twenty-eight-year-old woman who had just come out of the postpartum period applied to our clinic with complaints of nausea, vomiting, loss of appetite and weakness. Blood serum alanine aminotransferase and aspartate aminotransferase levels were increased. All serological tests were negative for viral hepatitis and autoimmune diseases. She had been drinking an herbal tea containing Pistacia vera L. bud every day for four weeks to increase milk production. Three weeks after discontinuation of herbal tea, liver enzymes returned to normal. Based on our knowledge, this is probably the first hepatitis report due to the use of an herbal tea containing Pistacia vera L. bud.

**Keywords:** Chemical and Drug Induced Liver Injury; Teas, Herbal; Pistacia; Liver Failure, Acute; Plants, Medicinal

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## 1. Introduction

Plants are used to make traditional medicine. Traditional medicines are passed on from generation to generation and their social use continues. Most of the society accepts herbal medicines as harmless. However, these products or their metabolites may cause some side effects such as liver damage. According to research data from the USA, approximately 20% of hepatotoxicity cases are caused by herbal nutritional supplements (1). Herbal teas have potential add-on effects in lowering blood glucose levels (2, 3). As the use of herbal products increases in Europe and the USA, an increase in hepatotoxicity cases is also observed (4, 5). This case report describes a breast-feeding woman who developed acute hepatitis due to drinking an herbal tea containing pistachio bud (Figure 1).

This is the first report of acute hepatitis related to use of a pistachio bud. This study shows that herbal tea containing Pistacia vera L. bud may cause hepatotoxicity that can be clinically confused with other causes of acute hepatitis. Clinicians may be faced with a case of acute hepatitis that can-



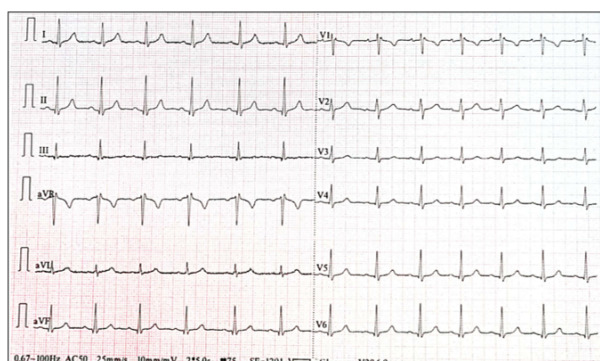
**Figure 1:** The view of Pistacia vera L. (<https://www.turktob.org.tr/tr/antepfistigi-yetistiriciligi-ve-bakimi/4906>).

not be easily diagnosed, and they should question the patient about the use of herbal medicine.

## 2. Case presentation

A twenty-eight-year-old woman, was admitted to the emergency department with symptoms of nausea, vomiting, anorexia, weakness and abdominal discomfort. The physical examination was unremarkable. Her medical history was negative for hepatic and metabolic disorders (such as obesity, diabetes mellitus, and atopy). The patient also mentioned that for the past 3-4 weeks she had consumed 2-3 cups of

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**Figure 2:** Electrocardiography of the patient .

home-made herbal tea containing *Pistacia vera* L. daily to increase lactation.

The initial laboratory values were: serum aspartate aminotransferase (AST) 1766.6 IU/l (reference range [RR] 5–34 IU/l), alanine aminotransferase (ALT) 1883 IU/l (RR 3–55 IU/l),  $\gamma$ -glutamyl transferase (GGT) 374 IU/l (RR 9–36 IU/l), alkaline phosphatase (ALP) 347 IU/l (RR 40–150 IU/l), total bilirubin 3.76 mg/dl (RR 0.2–1.2 mg/dl) and conjugated bilirubin 1.95 mg/dl (RR 0.0–0.5 mg/dl). Coagulation studies and other laboratory tests, including a complete blood count, serum urea nitrogen, creatinine, glucose, electrolytes, total protein and albumin were normal. Results of serological tests for viral hepatitis A, B and C, Cytomegalovirus, Epstein-Barr virus, and type 1 and 2 herpes simplex viruses, as well as serological tests for autoimmune disorders were negative. Moreover, serum ceruloplasmin and  $\alpha$ 1- antitrypsin were normal. Abdominal ultrasonography showed mild hepatic steatosis and a normal biliary tract.

And also electrocardiography was normal (Figure 2).

The *Pistacia vera* L. bud tea was stopped after admission and the patient was treated conservatively. Frequent assessment of the liver function was performed. The patient recovered clinically over the next one week. The patient's liver function tests returned to normal two weeks later.

### 3. Discussion

It is often difficult to identify the exact toxic component of herbal remedies, since they contain multiple ingredients and individual components may not be pure substances. Many patients consider herbal remedies as natural and harmless medications, and are turning toward the internet for information regarding their illness and are discovering the potential uses of herbal preparations (6). The true incidence of herbal remedy-induced hepatitis remains unknown because the diagnosis of toxicity induced by an herbal remedy is difficult since there are no specific tests or diagnostic criteria. Careful history taking, laboratory findings, and histo-

pathology are used to diagnose toxicity induced by herbal remedies (7-8).

Physicians and health officials need to warn the public of the potential danger.

To prevent severe risks due to the misuse of herbal products, it is very important to raise awareness among the public and healthcare professionals. Reporting more cases that involve severe toxicity resulting from the misuse of herbal products may increase awareness of this issue. In light of this, the information about these toxic effects has been provided by case reports, and hence it is difficult to establish a causal relationship. The actual incidence of adverse effects of herbal remedies is not known. The limitation of our case report is that the dose and effect cannot be measured. Case series are needed due to the limited number of case reports on this herb.

In addition, the inability to establish the relationships of age, weight, and dose with severity of toxicity is a limiting factor.

### 4. Conclusion

The above-described case suggests that herbal tea containing the *Pistacia vera* L. may be a cause of hepatitis, clinically indistinguishable from hepatitis of other etiologies. Thus, it highlights the fact that some herbal remedies may not be as safe as they are widely considered.

### 5. Declarations

#### 5.1. Acknowledgments

The authors thank all those who contributed to this study.

#### 5.2. Conflict of interest

There is no conflict of interest between the authors or between the authors and other persons-organizations.

#### 5.3. Fundings and supports

No financial resources other than the authors' own resources were used in this study.

#### 5.4. Authors' contribution

All authors met the four criteria for authorship contribution based on recommendations of the International Committee of Medical Journal Editors.

#### 5.5. Ethical consideration and patients' consent

The Ethics Committee of Faculty of Medicine, Educational and Research Hospital, Gaziantep Islam Science and Technology University reviewed the medical records and a statement covering patient data confidentiality. The Ethics Committee did not find it necessary to obtain permission for this research.

## References

1. Navarro VJ, Khan I, Bjornsson E, Seeff LB, Serrano J, Hoofnagle JH. Liver injury from herbal and dietary supplements. *Hepatology*. 2017;65(1):363-73.
2. Ahmed B, Sultana R, Greene MW. Adipose tissue and insulin resistance in obese. *Biomed Pharmacother*. 2021;137:111315.
3. Zhang J, Liu M, Hu B, Wang L. Exercise Combined with a Chinese Medicine Herbal Tea for Patients with Type 2 Diabetes Mellitus: A Randomized Controlled Trial. *J Integr Complement Med*. 2022;28(11):878-86.
4. Navarro VJ, Lucena MI. Hepatotoxicity induced by herbal and dietary supplements. *Semin Liver Dis*. 2014;34(2):172-93.
5. Clarke TC, Black LI, Stussman BJ, Barnes PM, Nahin RL. Trends in the use of complementary health approaches among adults: United States, 2002-2012. *Natl Health Stat Report*. 2015(79):1-16.
6. Cardenas A, Restrepo JC, Sierra F, Correa G. Acute hepatitis due to shen-min: a herbal product derived from *Polygonum multiflorum*. *J Clin Gastroenterol*. 2006;40(7):629-32.
7. Starakis I, Siagris D, Leonidou L, Mazokopakis E, Tsamandias A, Karatza C. Hepatitis caused by the herbal remedy *Teucrium polium* L. *Eur J Gastroenterol Hepatol*. 2006;18(6):681-3.
8. Ozbek H, Ugras S, Dulger H, Bayram I, Tuncer I, Ozturk G, et al. Hepatoprotective effect of *Foeniculum vulgare* essential oil. *Fitoterapia*. 2003;74(3):317-9.