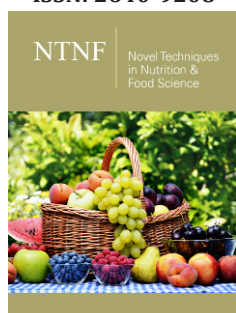


Acute Hepatocellular Damage After Consumption of *Raphanus Raphanistrum* L. (Donkey Radish): A Case Report

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Abstract

Raphanus raphanistrum L. (donkey radish) is a wildplant traditionally used for medicinal purposes but may rarely cause hepatotoxicity. A 19-year-old male presented with nausea, vomiting and fatigue after consuming the plant. Laboratory tests revealed marked transaminase elevation and coagulopathy. Viral caused were excluded and the patient improved with supportive treatment. This case highlights that even plants known for hepatoprotective effects may lead to acute hepatocellular injury.

Keywords: Toxic hepatitis; Hepatoprotective plants; *Raphanus raphanistrum* L.; Wild plant

Abbreviations: PLT: Platelet Count; HAV: Hepatitis A Virus; HBsAg: Hepatitis B Surface Antigen; VZV: Varicella Zoster Virus; CT: Computed Tomography; EGCG: Epigallocatechin Gallate

Introduction

Acute hepatocellular injury can develop due to many causes, including viral hepatitis, drugs, toxins, and wild plants. Consumption of wild plants is typical, especially in rural areas, and can sometimes lead to severe and potentially life-threatening hepatotoxicity. Acute hepatocellular injury due to the consumption of *Raphanus raphanistrum* L., commonly known as “donkey radish” “wild radish,” or “wild mustard” has been rarely reported. In the literature, this plant is generally noted for its hepatoprotective properties. A study on *R. raphanistrum* emphasizes that the plant possesses not only antioxidant but also antimicrobial potential [1]. These findings suggest that the plant may possess a wide range of bioactive properties.

Case

A 19-year-old male patient presented to the emergency room with complaints of fever, nausea, vomiting, loss of appetite, and fatigue. His medical history revealed that he had consumed a plant he collected from a field a few days earlier, which is commonly referred to as “donkey radish [2] (Figure 1).” The patient had no known chronic diseases and appeared to be in good general condition upon physical examination. He was conscious and oriented, and there were no signs of jaundice or hepatic encephalopathy. Furthermore, his abdominal examination was normal.

Vital signs at admission were as follows: blood pressure 135/83mmHg, pulse 68 beats per minute, oxygen saturation (SpO₂) 98%, and a fever of 38.6 °C. Laboratory findings revealed the following: AST 485U/L(0-40U/L), ALT 629U/L(0-45 U/L), LDH 587U/L(170-450 U/L), total bilirubin 0.69mg/dl(0,2-1,2), direct bilirubin 0.2mg/dL(0-0,2mg/dl), ALP 80U/L(40-150), GGT 26 U/L(12-64), APTT 45sn (24-36), INR 2.12(0,8-1,2), PTZ 38%(70-120), CRP < 3.13mg/L(0-3,13), white blood cell count (WBC) 5.1 × 10³/μL(3,8-10,4), and platelet count (PLT) 149 × 10³/μL(150-450). Serology tests for Hepatitis A virus (HAV IgM), Hepatitis B surface antigen

(HBsAg), anti-HCV, varicella zoster virus (VZV) IGM, HIV returned negative results. Blood cultures revealed no microbial growth. Additionally, a complete abdominal Computed Tomography (CT) examination showed no acute pathology. The patient was admitted with a preliminary diagnosis of acute hepatocellular injury. Oral intake was stopped, and intravenous fluid support was initiated. Vital signs and laboratory values were closely monitored. Over the follow-up period, gradual improvements were observed in the levels of AST, ALT, and INR (Table 1). The patient remained clinically stable and was discharged after five days, once liver function tests returned to normal limits.



Figure 1: *Raphanus raphanistrum* L. (Donkey Radish).

Table 1: Laboratory values of the case.

	Day 1	Day 2	Day 3	Day 4	Day 5
AST	485	192	152	198	129
ALT	629	421	338	358	137
INR	2.12	1.15	1.07	1.02	1

AST: Aspartate Aminotransferase; ALT: Alanine Aminotransferase; INR: International Normalizes Ratio

Discussion

Herbal products have been widely used in various cultures for centuries to prevent and treat various diseases. Today, due to the widespread belief that they are “natural and harmless,” they are frequently preferred by the public, particularly for supporting digestive, immune and liver health. However, the potential side effects of such use should not be overlooked. As reported in the cases of *Arum maculatum* (nirik herb), the saponin oxalates present in the plant can lead to mucosal irritation, systemic effects from hypocalcemia, and even serious complications that might result in death [3].

The plant known as donkey radish (*Raphanus raphanistrum* L.) is consumed by the public, particularly for digestive system problems and to support liver health. Some studies in the literature have reported that it exhibits antioxidant and hepatoprotective properties [4]. However, the composition and toxicity profile of herbal products can vary significantly depending on the region where they are grown, the type of soil, climatic conditions, harvest time, and storage conditions. Therefore, although rare, hepatotoxicity can develop even in plants known to be

hepatoprotective. In the presented case, the marked elevation of transaminases and coagulopathy that developed shortly after plant consumption are consistent with toxin-mediated acute hepatocellular injury. Exclusion of viral hepatitis and other common causes has focused the etiology on plant consumption. Although green tea (*Camellia sinensis*) exhibits vigorous antioxidant activity due to its epigallocatechin gallate (EGCG) content, cases have been reported in the literature where it causes hepatocellular liver injury when consumed in high doses and over prolonged periods [5].

These findings indicate that plants with antioxidant properties may also pose a risk of toxicity and should be thoroughly assessed for safety. Cases of liver injury linked to green tea extract often manifest as acute hepatitis, which is characterized by symptoms such as weakness, loss of appetite, jaundice, and significantly elevated aminotransferase levels. While most cases resolve on their own, up to 10% can be fatal [6]. Aloe vera is a widely used plant thought to be beneficial for many ailments, including liver disease. However, it has also been reported that it can be seriously hepatotoxic [7]. Yang et al. [8] highlighted three cases of toxic hepatitis due to Aloe vera use, emphasizing that physicians should always question patients' medical history about the use of herbal products. These findings demonstrate that herbal products can have both beneficial and potentially harmful effects.

Conclusion

This case demonstrates that some plants known to be hepatoprotective can, in rare cases, cause hepatotoxicity. After ruling out viral causes, it is essential to conduct a thorough investigation into the history of plant consumption and provide early supportive care to prevent potential complications.

Conflict of Interest

The authors declare that they have no financial or other conflicts of interest.

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