



## Insights into skullcap herb-induced liver injury

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### Abstract

This editorial addresses the growing concern of herb-induced liver injury (HILI), focusing on a unique case of Skullcap-induced HILI report. This editorial underscore the significant mortality rate linked to Skullcap-induced HILI, emphasizing the importance of vigilant monitoring and intervention. As herbal supplement usage rises, collaboration among clinicians and researchers is crucial to comprehend and address the complexities of HILI, particularly those involving Skullcap.

**Key Words:** Herb-induced liver injury; Drug induced liver injury; Dietary supplements; Herbal hepatotoxicity; Liver transplantation

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**Core Tip:** This study presents a comprehensive analysis of herb-induced liver injury (HILI), focusing on a unique case report of drug-induced autoimmune hepatitis due to Skullcap supplements and a systematic review/meta-analysis of 936 HILI cases associated with 79 herbs. Notably, Skullcap-induced HILI demonstrated hepatocellular patterns and mild-to-moderate severity, emphasizing the importance of recognizing potential adverse events associated with herbal dietary supplements. The study's findings underscore the need for increased awareness and vigilance in monitoring HILI, particularly in the context of rising herbal supplement usage.

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## INTRODUCTION

The growing popularity of traditional herbal dietary supplements (HDS) has prompted discussions regarding their potential association with liver injury, currently named Herb Induced Liver Injury (HILI). A case study reported by Thakral *et al*[1] published in the *World Journal of Hepatology* highlights a distinctive occurrence of autoimmune hepatitis induced by Skullcap supplements. This specific case underscores the significance of identifying potential adverse events associated with the utilization of HDS, particularly considering the rising prevalence of their use among the general population.

The reported case involves a middle-aged woman with no prior health issues, who developed sudden jaundice after four months of consuming Skullcap mushroom supplements. The case report indicates that despite testing negative for multiple chronic liver diseases, the first liver biopsy detected severe drug-induced liver injury in resolution. The patient's condition worsened, leading to a subsequent diagnosis of autoimmune hepatitis, with a positive response to discontinuation of the supplement.

In parallel, a comprehensive systematic review and meta-analysis by Ballotin *et al*[2] aimed to identify herbal products associated with HILI. The study, published in the *World Journal of Clinical Cases*, analyzed 936 cases reported in 446 references, identifying 79 types of herbs related to HILI. Skullcap-induced HILI typically manifested in individuals using the dried leaves and stems of *Scutellaria* spp. for various purposes, including the treatment of anxiety, stress, and insomnia. The onset of symptoms and jaundice occurred within one week to three months, with a pattern of typically hepatocellular liver injury, with a few cases of mixed hepatocellular and cholestatic liver injury. The dose that was ingested varied greatly Skullcap, ranging from 400 mg to 16 g daily. Skullcap-induced HILI was more prevalent among females and the mean age was 54 years-old. Common symptoms encompass nausea and choluria, with affected patients frequently reporting osteoarthritis and hypertension. Generally, HILI induced by Skullcap exhibits mild-to-moderate severity, resolving promptly upon discontinuation of the herb. This cessation typically results in the normalization of liver function tests within a period of 12 wk. However, in the systematic review by Ballotin *et al*[2] reveals a considerable mortality rate of 14.2% was described, and in some severe cases, liver transplantation was necessary, potentially influenced by publication bias favoring the reporting of more severe outcomes.

Both studies underscore the generally positive prognosis of HILI following discontinuation of the implicated herbal product. However, they also elucidate the potential for severity, emphasizing the need for vigilant monitoring and intervention. This severity is reflected in a significant mortality rate associated with Skullcap-induced HILI.

## CONCLUSION

In summary, there is an urgent need for increased awareness concerning the potential hepatotoxic effects of herbal supplements, with a specific focus on Skullcap. These cases emphasize the critical importance of recognizing and comprehending the patterns and outcomes linked to Skullcap-induced liver injury and other forms of HILI. As the usage of herbal supplements continues to escalate, fostering collaboration between clinicians and researchers becomes imperative to unravel the intricate nature of herb-induced liver injuries and guarantee the safe utilization of these products.

## FOOTNOTES

**Author contributions:** Soldera J contributed to writing and reviewing the final draft of the manuscript.

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- 2 **Ballotin VR**, Bigarella LG, Brandão ABM, Balbinot RA, Balbinot SS, Soldera J. Herb-induced liver injury: Systematic review and meta-analysis. *World J Clin Cases* 2021; **9**: 5490-5513 [PMID: [34307603](#) DOI: [10.12998/wjcc.v9.i20.5490](#)]



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