

INTRODUCTION

- Despite the growing prevalence of herbal and dietary supplements in patient care, there is limited knowledge regarding their safety and efficacy due to the great variability in their use and subsequent lack of randomized controlled trials; furthermore, there is a general reluctance in discussing their use in the clinical setting, increasing the risk of adverse effects.
- Conjugated linoleic acid (CLA)** is a polyunsaturated omega-6 fatty acid that is naturally found in ruminant milk fat and meat (Fig. 1). A synthetic form of CLA, produced from chemically altering linoleic acid found in vegetable oils, is commercially available in dietary supplements that are often used for weight loss.
- Although clinical studies have demonstrated certain adverse effects of CLA (e.g., GI side effects, increased insulin resistance and dysregulation), CLA-induced hepatotoxicity is a rare and unfamiliar effect that has only been observed in a handful of prior case reports, and deservedly necessitates greater scrutiny given the widespread accessibility of CLA-containing supplements.
- In current literature, this is only the fourth known case of CLA-induced hepatotoxicity, the second in the United States.

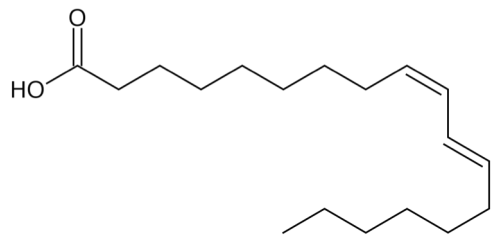


Fig. 1 – Rumenic acid, one of the many isomers of conjugated linoleic acid (CLA)

CASE PRESENTATION

A 77-year-old female with a past medical history of calculous cholecystitis status-post cholecystectomy presented to ED with band-like epigastric pain, back pain, nausea, and dry heaving, describing her symptoms as “a tight belt” wrapped around her waist. She described that similar episodes had occurred over the last few months despite extensive cardiac workup and incorporating several lifestyle changes, including a predominantly fruits and veggies diet, routine exercise, and use of store-bought vitamins and supplements. A month prior, she had exhibited these symptoms while on a cruise to Mexico and was hospitalized in Cozumel, during which she noted to have abnormally elevated liver function tests (LFTs); however, her repeat labs performed shortly after returning from her trip were unremarkable. In the ED, cardiopulmonary workup was negative. LFTs were elevated with total bilirubin 1.5, ALP 398, AST 1003, ALT 409. Lipase was normal. CT abdomen/pelvis did not illustrate biliary dilatation or filling defects. Gastroenterology was consulted for further evaluation of her elevated transaminases, the pattern of which was most suggestive of viral hepatitis, drug-induced liver injury or idiosyncratic drug reaction, or ischemic hepatitis from a potential hypotensive episode. Investigation into these etiologies – including a viral hepatitis panel, serum acetaminophen level, anti-nuclear antibody titer, and careful medication reconciliation – did not reveal any inciting factors. Fortunately, solely with supportive care, her symptoms improved over the next few days and her elevated liver transaminases started improving. Given the negative workup, the patient was further interviewed in hopes of identifying any potential causes of her hepatotoxicity, which was now suspected to be of drug-induced etiology given her natural improvement in a controlled setting. Further questioning revealed that, as part of her recently acquired lifestyle habits, she had started consuming CLA-safflower oil, a dietary supplement that is frequently used for weight loss. She was instructed to stop its use and her outpatient follow-up appointment demonstrated that her liver transaminases had returned to normal levels.

CONCLUSION

- Synthetic conjugated linoleic acid – commonly used in dietary supplements advertised for weight loss – may rarely lead to toxic hepatitis.
- With a significantly increasing proportion of drug-induced liver injury (DILI) secondary to herbal and dietary supplements, inquiring about their use may be imperative in stopping offending agents and preventing long-term liver injury.

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