



HERBAL AND DIETARY SUPPLEMENTS ASSOCIATED WITH INCREASES IN DRUG-INDUCED LIVER INJURY

EMBARGOED UNTIL 12:01am Monday 26 July 2021

THE proportion of patients admitted to hospital with drug-induced liver injury (DILI) caused by herbal and dietary supplements has increased since 2009, leading to a call for more rigorous regulatory oversight and culturally appropriate community education.

Research published by the *Medical Journal of Australia* found that patients who had taken herbal and dietary supplements had poorer outcomes than patients with DILI caused by paracetamol and prescription medicines. Almost half the patients with supplement-related DILI had non-European ethnic backgrounds.

Dr Emily Nash, from the AW Morrow Gastroenterology and Liver Centre at the Royal Prince Alfred Hospital (RPA) in Sydney, and colleagues analysed electronic medical record data from 184 adults admitted with DILI to the RPA between 2009-2020.

"A total of 115 patients with paracetamol-related DILI and 69 with non-paracetamol DILI patients were admitted to our centre," Nash and colleagues reported.

"The most frequently implicated non-paracetamol medications were antibiotics (19, 28%), herbal and dietary supplements (15, 22%), anti-tuberculosis medications (six, 9%), and anti-cancer medications (five, 7%).

"The number of non-paracetamol DILI admissions was similar across the study period, but the proportion linked with herbal and dietary supplements increased from 2 of 11 (15%) during 2009-11 to 10 of 19 (47%) during 2018-20."

Transplant-free survival was also worse for non-paracetamol DILI, Nash and colleagues found.

"Ninety-day transplant-free survival for patients with paracetamol-related DILI was higher than for patients with non-paracetamol DILI (86% v 71%) and in herbal and dietary supplement-related cases (59%," they wrote.

"Indeed, the prognosis for patients with paracetamol-related DILI and acute liver failure is good, as these patients are generally younger and have fewer other medical conditions, and an antidote for paracetamol poisoning is available."

Nash and colleagues said that bodybuilding and weight loss supplements were implicated in half of the non-paracetamol DILI cases, "but the number in which traditional Chinese medicines were implicated was higher than in other reports, perhaps unsurprising in light of the strong demand for traditional Chinese medicines in Australia".



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The Medical Journal of Australia

Media Release

The authors said there were three important clinical implications to their findings:

- paracetamol-related DILI remains a health burden and public health measures, including further reductions of pack sizes, should be considered;
- the rise in the proportion of non-paracetamol DILI cases in which herbal and dietary supplements were implicated reflects the rise in supplement use in Australia over the past two decades -- although the regulation of herbal and dietary supplements has improved, it remains imperfect, and overseas herbal and dietary supplements purchased online evade Australian regulatory oversight;
- community education is important - about half of the patients in our study with supplement-related DILI had non-European ethnic backgrounds, compared with fewer than 20% of patients with non-paracetamol DILI caused by other medications; culturally and linguistically diverse communities should therefore be targeted for appropriate education about the potential dangers of herbal and dietary supplements.

"DILI remains an important clinical problem that requires more investigation, regulatory changes for the substances involved, and patient and community education," Nash and colleagues concluded.

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