

**N acetylcysteine in the treatment of alcohol use disorder with or without liver disease:
A pilot, randomized, double-blind, placebo-controlled trial**

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Introduction and aims: N-acetyl cysteine (NAC) is a potent antioxidant that modulates glutamatergic signalling which plays a role in establishing and maintaining alcohol use disorder (AUD) and also implicated in alcohol-related liver disease ArLD. To date there have been no clinical trials directly investigating NAC in the management of AUD. We aimed to conduct a 28 day double-blind, placebo-controlled randomized pilot trial of NAC in the treatment of AUD with or without ArLD (NCT03879759).

Methods: 42 participants with alcohol use disorder (56% ArLD) were randomized to receive placebo or NAC 2400 mg/day for 28 days. Outcome measures included alcohol consumption (number of heavy drinking days, number of standard drinks per week), liver function tests (AST, ALT, GGT), adverse events.

Results: There was a significant effect of time (F 's < 15.72, P 's > 0.001) for all outcomes but no significant treatment effect or time × treatment effects for alcohol consumption outcome measures (F 's = 2.40, P = 0.13). There were near significant treatment trends for follow-up GGT (Mann Whitney U = 42, P = 0.05) and a significant treatment effect for follow-up AST (Mann Whitney U = 34.5, P = 0.02) but not for ALT (Mann Whitney U = 55, P = 0.23).

Discussion and conclusion: These pilot results indicate that NAC may improve some markers of liver function in AUD. A randomised controlled trial in a larger sample is required.

Disclosure of Interest Statement: The Australasian Professional Society for Alcohol and other Drugs (APSAD) recognises the considerable contribution that industry partners make to professional and research activities. We also recognise the need for transparency of disclosure of potential conflicts of interest by acknowledging these relationships in all written publications.

There are no competing interests related to this study.