

6.5 Antabuse reduces cocaine and alcohol use among opioid maintenance patients

Findings Disulfiram (Antabuse) can not only reduce drinking but also cocaine use among patients being treated for opiate addiction.

Study 1 tried disulfiram on 67 methadone patients persistently and frequently using cocaine. A quarter were dependent on alcohol. Patients were warned about the unpleasant effects drinking on disulfiram which include vomiting, flushing and chest pains. Then for 12 weeks they were randomly allocated disulfiram or placebo dissolved in methadone taken at the clinic, where they were also breathalysed. Nearly 80% completed the study. Drinking was virtually eliminated and cocaine and heroin use fell on both disulfiram and placebo, but cocaine use dropped further and faster on disulfiram. The effect was moderate but statistically significant, and evident in non-drinkers as well as drinkers.

In **study 2**, after entering buprenorphine maintenance 20 patients dependent on opiates and cocaine were given disulfiram or placebo for 12 weeks. At entry to the study drinking was negligible. Patients were warned about unpleasant interactions between disulfiram and alcohol or cocaine. Disulfiram patients were abstinent from cocaine for nearly eight weeks as opposed three for the placebo group, used cocaine less and less often, and reduced use more rapidly. Perhaps due to the small sample, though large the differences were not statistically significant.

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In context A large and probably under-estimated minority of Britain's methadone patients are regular cocaine users and a minority drink very heavily. Current regimes do little to affect alcohol use and have a limited impact on cocaine use.

Cocaine dependents are often also heavy drinkers and use of one drug predisposes to use of the other. Alcohol is used to soften cocaine's adverse effects and to intensify its desired effects. Disrupting this relationship by blocking alcohol use is the main rationale for disulfiram treatment of cocaine dependence, one previously shown to work in cocaine users not on methadone. The featured studies suggest that disulfiram also *directly* reduces cocaine use. However, studies are few and not always convincing.

In **study 1** sanctions for using heroin, cocaine or alcohol probably helped disulfiram and placebo (the threat of disulfiram) have an impact as did in **study 2** the prospect of continued treatment, an incentive to 'behave'. Also, people who volunteer for such studies are presumably ready to tackle their cocaine and alcohol use. These features could explain the *extra* impact of disulfiram, but might explain why patients were willing to take the pills.

Practice implications Medical contraindications, potentially risky interactions with cocaine and alcohol, and side effects limit disulfiram's role to those in greatest need of reducing alcohol and cocaine use. Opioid maintenance provides opportunities to overcome typically poor long-term compliance by tying disulfiram to methadone or take-home doses. Methadone patients do not necessarily want to reduce alcohol and cocaine use, so there may be a role for a preparatory motivational intervention; if patients react to disulfiram by exiting treatment, the initiative will have been counterproductive.

Disulfiram may help cocaine users become abstinent, but many can already take a break from the drug without difficulty. Maintaining remission is the difficulty. Cognitive-behavioural relapse prevention strategies are likely to be important as is the reconstruction of deeply damaged social, family, economic and work lives and co-working with the criminal justice system. The prolific criminality needed to maintain a crack/heroin habit, the risks run by users, the social damage entailed in a crack-focused lifestyle, and the prospect of an influx of such patients into treatment from criminal justice sources, place a priority on developing ways to deal with this client group.

Featured studies 1 Petrakis I.L., *et al.* "Disulfiram treatment for cocaine dependence in methadone-maintained opioid addicts." *Addiction*: 2000, 95(2), p. 219–228 **2** George T.P., *et al.* "Disulfiram versus placebo for cocaine dependence in buprenorphine-maintained subjects: a preliminary trial." *Biological Psychiatry*: 2000, 47, p. 1080–1086. Copies: apply DrugScope.

Contacts 1 **Ismene Petrakis**, West Haven VA Medical Center, 950 Campbell Ave., West Haven, CT 06515, USA, e-mail ismene.petrakis@yale.edu **2** **Tony George**, Room S-109, Connecticut Mental Health Centre, 34 Park Street, New Haven, CT 06519, USA, e-mail tony.george@yale.edu.

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