

Smoking cessation aide shows promise as alcoholism treatment

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A medication commonly used to help people stop smoking may have an unanticipated positive side effect for an entirely different vice: drinking alcohol. A new study by University of Chicago researchers finds that varenicline, sold as Chantix, increases the negative effects of alcohol and therefore could hold promise as a treatment for alcoholism.

A group of heavy-to-moderate [social drinkers](#) given a single dose [varenicline](#) three hours before an [alcoholic beverage](#) reported increased dysphoria and reduced "liking," even when researchers controlled for the effects of nausea from the drug. Those effects upon the subjective response to [alcohol](#) could reduce [drinking](#) in people prone to bingeing and other forms of abuse.

"We found that varenicline increased the unpleasant [effects of alcohol](#) and decreased drug liking," said Emma Childs, PhD, research associate at the University of Chicago Medicine and first author of the study published in *Alcoholism: Clinical and Experimental Research*. "Thus, we think that varenicline may reduce drinking by altering the effects of alcohol."

Some patients prescribed Chantix to quit smoking have anecdotally reported a reduction in consumption of alcohol as well, and controlled studies in animals and humans have supported the effect. Researchers are now looking for neurobiological mechanisms that connect varenicline, a partial agonist of the brain's [nicotinic receptors](#), with reduced alcohol craving or consumption.

"Smokers who use varenicline are approximately two to three times more likely to remain abstinent six months or more after their quit date," said Childs. "After it was approved, several patients treated with varenicline also reported reductions in their drinking, so investigators began to assess if this was an actual effect and how it might be produced."

The new experiment is the first to look at the acute effects of a single dose of varenicline on the subjective response to a subsequent alcoholic drink. Subjects were recruited based on heavy drinking behavior, not smoking behavior - though the recruits did smoke 4 cigarettes a day on average.

15 subjects (8 men and 7 women) were brought to the laboratory for six different sessions. On each day, the subject received either a varenicline or placebo capsule, and then three hours later was given a drink containing 0, 0.4, or 0.8 mg/kg alcohol. Researchers monitored the effects of the drink on cardiovascular and eye movement measures, and subjects filled out questionnaires to report the subjective effects of the drink.

Compared to sessions where the subjects received a placebo pill, varenicline increased nausea, heart rate, blood pressure. After an alcoholic drink, self-reported dysphoria was increased while alcohol effects on subconscious eye movements (a measure of the drugs' objective effects) were reduced. Even after controlling for the effect of nausea upon the subsequent response to a drink, the increased dysphoria and reduced "drug liking" after [drinking alcohol](#) remained significant.

By increasing the negative effects of alcohol, varenicline might be most effective in people who are unable to stop consuming alcohol after only one drink, Childs said.

"Our findings shed light on the mechanism underlying why people consume less alcohol when they have taken varenicline," said Childs. "The pleasurable effects of alcohol, for example feeling 'buzzed' and talkative, are associated with greater consumption and binge drinking. Some people lose control of their alcohol consumption during a drinking episode, for example they may aim to only have one or two drinks but end up drinking say four or five. If varenicline counteracts these positive

effects by producing unpleasant effects, then as a result people may consume less alcohol during a drinking episode."

The authors cautioned that their study only examined the acute effect of a single dose of varenicline, rather than the sustained exposure experienced with regular use of the drug. But because the effectiveness of varenicline has already been proven as a smoking cessation drug, the unanticipated effects on drinking may make people struggling with both behaviors a logical first target.

"Varenicline may find a nice niche in those individuals who are both nicotine and alcohol dependent, who we know represent a large portion of alcohol-dependent individuals," added Hugh Myrick, associate professor of psychiatry at the Medical University of South Carolina, who was not involved in the study. "Since there is a high comorbidity between nicotine and alcohol dependence, a single medication that could decrease the use of both substances would be ideal."

More information: The paper, "Varenicline potentiates alcohol-induced negative subjective responses and offsets impaired eye movements," will be published online by *Alcoholism: Clinical and Experimental Research* on February 15th.

Provided by University of Chicago Medical Center

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