Anti-smoking medication shows promise for treating alcohol dependence

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A smoking-cessation medication may be a viable option for the treatment of alcohol dependence, according to a study by scientists at the National Institutes of Health. The study found that varenicline (marketed under the name Chantix), approved in 2006 to help people stop smoking, significantly reduced alcohol consumption and craving among people who are alcohol-dependent. The findings were published online in the *Journal of Addiction Medicine*.

"This is an encouraging development in our effort to expand and improve treatment options for people with alcohol dependence," says Kenneth R. Warren, Ph.D., acting director of the National Institute on Alcohol Abuse and Alcoholism (NIAAA), part of NIH. "Current medications for alcohol dependence are effective for some, but not all, patients. New medications are needed to provide effective therapy to a broader spectrum of alcohol dependent individuals."

Alcohol dependence is a chronic disease that includes symptoms such as craving, loss of control over drinking, withdrawal symptoms after stopping drinking, and tolerance, the need to drink greater amounts of alcohol to feel the same effect.

"Drinking and smoking often co-occur, and given their genetic and neurochemical similarities, it is perhaps unsurprising that a smoking cessation treatment might serve to treat alcohol problems," notes lead author Raye Z. Litten, Ph.D., associate director of the NIAAA Division of Treatment and Recovery Research. "Our study is the first multi-site clinical trial to test the effectiveness and safety of varenicline in a population of smokers and nonsmokers with alcohol dependence," said Dr. Litten.

Early studies testing varenicline as a smoking cessation medication suggested it might also be effective for treating alcohol problems. Varenicline works by partially stimulating receptors for nicotinic acetylcholine, a promising molecular target implicated in both nicotine and alcohol disorders. This hypothesis was supported by early animal studies which showed that varenicline decreases alcohol consumption.

Dr. Litten and NIAAA colleagues Dr. Joanne Fertig, Dr. Daniel Falk and Megan Ryan worked with NIAAA's Clinical investigations Group, a multi-center team of researchers at Boston Medical Center; the University of Virginia, Charlottesville; Dartmouth University, Hanover, N.H.; the University of Pennsylvania, Philadelphia; and Johns Hopkins University School of Medicine, Baltimore. The researchers randomized 200 alcohol-dependent adults to receive varenicline or placebo each day for 13 weeks.

Study participants had reported drinking an average of at least 28 drinks per week for females or 35 drinks per week for males prior to the study, with women and men drinking at least four and five drinks, respectively, on most days.

Compared with placebo, varenicline significantly reduced measures of alcohol use. For example, the percentage of heavy drinking days per week decreased nearly 22 percent in the varenicline group.

The researchers noted that varenicline's effects were comparable to those seen in studies of naltrexone and acamprosate, two of the medications already approved by the U.S. Food and Drug Administration for the treatment of alcohol dependence. The average treatment effect on alcohol use was similar for smokers and nonsmokers. Alcohol craving also was significantly reduced in people treated with varenicline.

Dr. Litten and colleagues reported that varenicline was well-tolerated by study participants. The most common side-effects of varenicline were nausea, abnormal dreams, and constipation, and those

effects generally were mild. The researchers conclude that longer treatment with varenicline and follow-up assessments to determine if there are sustained effects would be a valuable next step in the development of this medication for alcohol problems.

More information: Litten, R. et al. A double-blind, placebo-controlled trial assessing the efficacy of varenicline tartrate for alcohol dependence, *Journal of Addiction Medicine*, 2013 May 31.

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