Ibogaine blocks some of the rewarding effects of alcohol in rodent model of addictive behavior

by **Eric W. Dolan** — March 27, 2022 in **Addiction**, **Psychedelic Drugs**

The psychedelic substance known as ibogaine blocks some addiction-related effects of alcohol in mice, according to new research published in *Frontiers in Pharmacology*.

"Our laboratory at Universidade Estadual de Santa Cruz in Brazil has been for many years investigated potential treatments for alcohol abuse," explained study author Lais F. Berro. "Alcohol use disorder is a global public health problem and a leading cause of absenteeism and death worldwide, and while treatment options exist, the currently available treatments are not always effective."

"Psychedelics and natural products with hallucinogenic properties have long been proposed as a treatment for alcohol abuse, but it is often difficult to know whether their effects are pharmacological or associated with the environment in which these natural products are often consumed (retreats, religious ceremonies, etc)."

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“In our laboratory we investigate the pharmacological effects of these products in pre-clinical studies in rodents,” Barro said. “Ibogaine is one of those natural products. Ibogaine is extracted from the plant *Tabernanthe iboga*, natural from Africa, and is commonly used during religious ceremonies in the form of a tea made from the plant’s stem and root bark.”

“Previous studies had shown that it may decrease the abuse-related effects of alcohol. So we investigated in our laboratory whether ibogaine would block the expression of ethanol reward. Because there is concern over the abuse potential of psychedelic drugs per se, which could limit their clinical use, we also investigated whether ibogaine induced rewarding effects itself.”

For their study, the researchers utilized a rodent model of addiction known as conditioned place preference, which measures the tendency for animals to spend more time in a chamber where they had been trained to expect a reward.

Berro and her colleagues found that, as expected, alcohol induced a conditioned place preference in mice, highlighting its addictive properties. But this was not observed among mice who received doses of ibogaine. In addition, the researchers found that treatment with ibogaine after alcohol conditioning blocked the reinstatement of alcohol-induced place preference.

“We found that ibogaine did not have rewarding effects itself, but it did block the expression of ethanol reward in a model that can commonly be referred to as a pre-clinical model of relapse,” Berro explained.

The findings provide more evidence that psychedelic substances may have therapeutic value for the treatment of alcohol addiction.

“There is still a lot of taboo regarding the therapeutic use of psychedelic drugs for the treatment of psychiatric conditions, despite the growing evidence showing that they have very important therapeutic effects,” Berro told PsyPost. “While these substances are generally classified as Schedule I, alleging no established medical use and a high drug abuse potential, there is growing evidence showing that they might be safe and effective tools for short term interventions in the treatment of addiction and other psychiatric disorders.”

“I believe the general public should be aware of the potential benefits of using these drugs in a therapeutic setting, especially in the context of medication-assisted therapy. Our study shows that treatment with ibogaine during alcohol abstinence could prevent craving and relapse into drug use. While this is very much still speculation based on pre-clinical data, it emphasizes the need for clinical studies investigating these drugs as treatment for substance use disorders.”

But the study, like all research, includes some limitations.

“One of the major caveats of our study is that it is a pre-clinical study, and often pre-clinical data fail to show efficacy in clinical studies. However, our study is translational in that it used clinical evidence from case reports and studies describing positive effects in people who self-medicate with ibogaine to base our pre-clinical design,” Barro said.

“Therefore, a major question that still needs to be addressed is whether or not the same results would be observed in the clinic. Evidence has pointed to an increasing number of individuals with substance use disorders self-medicating with psychoactive substances, emphasizing the importance of future controlled clinical trials investigating the safety and efficacy of psychoactive substances for the treatment of drug addiction.”

The study, “Ibogaine Blocks Cue- and Drug-Induced Reinstatement of Conditioned Place Preference to Ethanol in Male Mice“, was authored by Gabrielle M. Henriques, Alexia Anjos-Santos, Isa R. S. Rodrigues, Victor Nascimento-Rocha, Henrique S. Reis, Matheus Libarino-Santos, Thaísa Barros-Santos, Thais S. Yokoyama, Natalia B. Bertagna, Cristiane A. Favoretto, Célia R. G. Moraes, Fábio C. Cruz, Paulo C. R. Barbosa, Eduardo A. V. Marinho, Alexandre J. Oliveira-Lima, and Laís F. Berro.

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