Treatment with kudzu extract does not cause an increase in alcohol's intoxicating effects

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Kudzu, a medicinal plant, has long thought to reduce alcohol dependence, but the precise mechanism remains a mystery. Recent research from the McLean Hospital shows that pre-treatment with kudzu extract had little to no effect on the participant's behavioral, physical or cognitive performance.

There are many ways, both medical and traditional, that are used to treat alcohol abuse or dependence. In China, kudzu root extract has been commonly used to reduce, but not eliminate, alcohol consumption and dependence. Despite its history, the mechanism of action for kudzu extract is still unknown, and that is what the current research explores.

Results of the study will be published in the April 2011 issue of *Alcoholism: Clinical & Experimental Research* and are currently available at Early View.

David M. Penetar, senior author of the study and assistant Professor of Psychology in the Department of Psychiatry at McLean Hospital, said that kudzu has been around for centuries to treat alcohol intoxication, hangovers and other related problems in humans. But, how kudzu manages this is still not understood. One possibility is through the different isoflavones, which are biologically active molecules that can affect physiology, contained within the kudzu extract.

"Recently, preclinical studies with animals have shown reductions in alcohol consumption when treated with isoflavones contained in the kudzu root," said Penetar. "Therefore, the next step in the research was to assess the effects of kudzu extract on different physical, behavioral and cognitive features in humans."

The researchers observed 12 men and women in a double-blind placebo-controlled study. The participants were either treated with kudzu or a placebo for nine days, and then received a medium or high alcohol challenge to determine how prominently they presented alcohol-related symptoms.

The results showed pre-treatment with kudzu extract had little to no effect on the participant's behavioral, physical or cognitive performance. However, the researchers did note that treatment with kudzu caused an increase in heart rate, skin temperature and blood ethanol levels in the participants. Based on this, the researchers hypothesized that an increase in blood ethanol levels could translate into increased effects from the first alcoholic drink and delay an individual's desire for subsequent drinks.

"The fact that participants experienced a rapid rise in blood alcohol levels when pre-treated with kudzu has no apparent explanation and therefore requires additional research," said Penetar. For the researchers, the next step is to determine if kudzu alters regional brain blood flow using an fMRI.

"If alcohol reaches the brain earlier, people might stop drinking earlier or drink less because they achieve the desired intoxication level earlier, with less alcohol," said Robert Swift, a Professor of Psychiatry and Human Behavior at Brown University and the Providence VA Medical Center.

"It is also possible that there is another, as yet undiscovered compound in the mixture that accounts for the effects. Thus, the mechanism of action of the kudzu extract remains unknown."

Provided by Alcoholism: Clinical & Experimental Research

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