Ketamine produces rapid-onset antidepressant action

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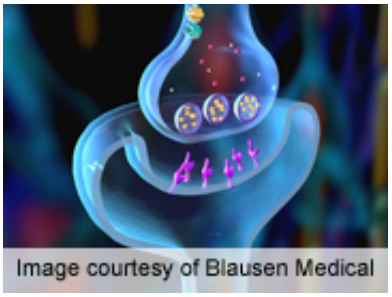

(HealthDay)—Ketamine has rapid-onset antidepressant action, although the mechanism of its positive effect is currently unclear, according to research published online Dec. 26 in the *Journal of Clinical Pharmacy and Therapeutics*.

Noting that the current pharmacotherapeutic treatment of major depressive disorder (MDD) can take weeks to be effective, Erin Drewniany, Pharm.D., from the Temple University School of Pharmacy in Philadelphia, and colleagues examined the role of ketamine as a more rapid-onset antidepressant.

The researchers found that based on recent evidence, ketamine produces rapid-onset antidepressant action. In a review of 29 studies, the response rate for ketamine varied from 25 to 100 percent, although there were no

active comparators to control for the subjective effects of ketamine. In a review of studies involving animal models, acute administration of ketamine produced an antidepressant-like effect in rodent models of depression. Ketamine has a broad spectrum of pharmacologic activity, including affinity to the *N*-methyl-*D*-aspartate (NMDA) receptor (NDMAR), dopamine D2 receptors, and opioid receptors, as well as inhibition of neuronal reuptake transporters of 5-HT (5-hydroxytryptamine) and norepinephrine.

"Reports of ketamine's efficacy in patients with MDD are supported by extensive preclinical evidence of its efficacy in standard animal models of depression," the authors write. "The mechanism of its positive effect is not known (it is unlikely due to direct NMDAR antagonism, because the NMDAR antagonist memantine is not also antidepressant), but several biochemical mechanisms have been proposed."

More information: Abstract
Full Text