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Pharmacological aspects and potential new clinical applications of ketamine: reevaluation of an old drug.

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Abstract

Ketamine, the phencyclidine derivative described in 1965, is an intravenous anesthetic with a variety of applications. The enthusiasm following its initial release subsided due to side effects from the central nervous system. New anesthetics limited the role of ketamine in anesthetic practice. However, its hemodynamically stable profile, along with its beneficial respiratory properties and analgesic potency, rendered the drug invaluable in battlefield medicine, sedation of the uncooperative child, analgesia, and sedation in burn units. Reevaluation, though, of analgesic properties of ketamine resulted in new interest regarding its use in perioperative and chronic pain management. Moreover, recent studies in the effects of the substance on intracranial pressure and cerebral blood flow led to revising the recommendation against its use in brain injury. Furthermore, the bronchodilating effects of the substance led to increasing interest for potential use in asthma treatment. In addition, separation of the 2 enantiomers and subsequent separate studies indicated beneficial results of the S(+) one. Thus, new controlled multicentered clinical trials are to be conducted to justify approval for new uses of ketamine and take advantage of its unique range of applications.

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