February Pharmacy Newsletter

Differences of Ketamine vs Esketamine

Ketamine and esketamine are chemically related, however, they are very distinct in terms of their chemical compositions, the FDA-approved indications, dosing, and administration, as well as the level of study and data supporting their safe and effective use.

Ketamine is approved in the United States as a general anesthetic via intravenous infusion or intramuscular injection. It is indicated as the sole anesthetic agent for diagnostic and surgical procedures that do not require skeletal muscle relaxation, for the induction of anesthesia before the administration of other anesthetic agents, and as a supplement to other anesthetic agents. It is not indicated for major depressive disorder (MDD) or treatment resistant depression (TRD), although it is frequently used off-label for these indications.

During the 1970s, ketamine had become a widely used recreational drug, with street names such as K, Special K, KitKat, Vitamin K, ket, and Super K. Ketamine abuse is closely associated worldwide with the use of other "club drugs" including "Molly" or "ecstasy" (3,4-methylenedioxymethamphetamine or MDMA), gamma hydroxybutyrate (GHB), and methamphetamine. Prudent consideration when using ketamine should be exercised. Review who should not receive ketamine and the side effect profile with certain comorbidities. Possible contraindications include history of allergic reaction to ketamine, hypertensive emergency, decompensated heart failure, cardiac ischemia, pulmonary hypertension, and risk for psychotic behavior, including schizophrenia and alcohol withdrawal.

Esketamine, the (S) enantiomer of racemic ketamine, is administered intranasally and is FDA-approved for adults with TRD and adults with MDD with suicidal thoughts or actions in combination with an oral antidepressant. Esketamine nasal spray is recommended for adults diagnosed with major depressive disorder (MDD) who did not respond to trials of at least two antidepressants, and who currently have a major depressive episode of moderate or severe intensity. Esketamine is administered in a physician's office with a strict treatment protocol enforced by a mandatory Risk Evaluation and Mitigation Strategy (REMS) program due to monitoring requirements and misuse and abuse risk.

A psychiatric assessment to identify appropriate prescribing for patients should be completed by a trained mental health expert who understands the clinical administration of both ketamine and esketamine and their respective indications.

Vigilance should be exercised when prescribing these compounds. In the US there has been a been a rapid proliferation of ketamine clinics to treat depression that operate with little, to no, regulation. In addition, there is evidence which suggests ketamine is becoming more widely used as a recreational drug as evidenced by a study which found ketamine poisonings in the US increased 81% between 2019 and 2021.

Ketamine Poisoning Cases

Two first responders in Colorado were convicted for giving a fatal overdose of ketamine in 2019. The paramedics did not conduct basic medical checks, such as taking a pulse, before giving the ketamine. Experts testified; the dose given was higher than recommended dose for the individuals weight.

Another case was the recent death of Matthew Perry, in which ketamine was determined to play a contributing role in the actor's death. It is still unknown if ketamine was obtained illicitly or was prescribed to him, but there are preliminary reports that a considerable number of people who use ketamine at home, supposedly for therapeutic use, under the supervision of a clinician, end up using more than the indicated doses.

Keep in mind when considering treatment, this potential treatment that has significant therapeutic promise but also serious risk.

References:

1. https://www.medscape.com/viewarticle/817961
2. https://pharmacist.therapeuticresearch.com/Content/Segments/PRL/2016/Nov/Ketamine-for-ICU-Analgesia-and-Sedation-10434
3. https://www.pbs.org/newshour/nation/paramedics-convicted-in-death-of-elijah-mcclain-for-giving-fatal-ketamine-overdose
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9922941/

PREFERRED DRUG LIST UPDATES CAN BE FOUND HERE:

Integrated (Title 19/21 SMI), ACC, DD, ALTCS and DCS CHP
https://www.mercycareaz.org/providers/pharmacy.html

Behavioral Health (Non-Title 19/21)
https://www.mercycareaz.org/providers/pharmacy.html

** Drugs that are not on the formulary will require a PA (prior authorization) request to be submitted**

Reminder for quicker determinations of a Prior Authorization use the ePA link for Our Providers: Please click here to initiate an electronic prior authorization (ePA) request

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