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Subject: CAT block 6

Article: "Low dose ketamine improves pain relief in patients receiving intravenous opioids for acute pain in the emergency department." Beaudoin, Francesca, MD, et al. Academic Emergency Medicine. Vol 21, Issue 11, 1193-1202. 6 Nov 2014.

Ketamine has become increasingly prevalent in ER medicine. Its use is often limited to large dose conscious sedation or RSI. Some physicians have branched out to use low dose ketamine as an adjunct for patients requiring high dose opioid medication for pain relief. This has been established in the surgical world and is a common mainstay of post-operative pain in many parts of the country. This may be an appropriate practice for patients with uncontrolled pain in the ED and single dose ketamine could decrease the number of patients requiring admission for pain control.

This study was a double blind randomized placebo controlled trial. Patients were considered eligible if they were 18 to 65 years old with the pain score of at least 5/10 with acute pain less than one week in duration. The patient had to be considered a candidate for IV opioid pain medication prior to inclusion in the study. The investigators divided the study group into 3 groups: opioid and saline, opioid and low dose ketamine (0.15 mg/kg), and morphine and mid dose ketamine (0.3 mg/kg). Pain was reassessed using the ten point pain scale at intervals following time of medication administration with a primary study goal of 50% reduction in pain score.

Although the study was conducted over 10 months in an urban hospital setting, the investigators were only able to find 60 patients to enroll in the study. They did find that ketamine reduced the patient reported pain score compared to the standard of care group. They did not find a statistically significant difference in the pain reduction received between the low dose and mid dose ketamine. 35% of the standard of care group required additional doses of pain medication while 20% of the patients receiving both opioids and ketamine required additional doses of pain medications.

Ketamine is not without side effects. At this low dosing, disequilibrium side effects including dysphoria and dizziness were most common. These side effects were slightly more common in the higher weight-based dosing group. There is no discussion of the exclusion of cardiac patients however there is also no reported significant cardiovascular decompensation as a result of the ketamine in this study at such low doses.

It seems that one of the arts of emergency medicine is to have multiple treatment pathways in your repertoire to care for the patient who just doesn't fit the standard treatment mold. Ketamine is a popular single-dose ER medication. It is satisfying to use since it is effective but no one comes in the door requesting ketamine. While many of the patients in this small study did require additional doses of IV pain medication despite ketamine use, it is nice to have an additional option to try to both help relieve pain not alleviated by opioids alone and as a single-dose option for patients who do not meet admission criteria however require IV pain medications before they will go home.
