Like the ripples made by a rock thrown into a pond, the evils of opioid’s especially those “handed out” by physicians perturbs the pond of common sense medical care. A new study looks at the problem of “preoperative” anxiety and whether music is as or more effective than midazolam. Midazolam is not an opioid; it is a sedative-hypnotic in the benzodiazepine family and is frequently given to patients before a procedure to reduce their stress. Very few patients are stress-free just before a procedure that involves needles and knives, and midazolam helps.

Can music do better, and to what end?

One hundred sixty patients underwent a peripheral nerve block, a procedure meant to deaden a region of the body. It is like the dentist numbing your mouth, but this numbs your arm and shoulder, or entire leg, were randomized to receiving a small dose of midazolam or listening to music. Their anxiety was measured by a validated anxiety measurement, the State-Trait Anxiety Inventory before and after the procedure. After the initial evaluation, patients were randomized, some receiving midazolam and other listening to music for 3 minutes. In addition to stress levels, both patients and physicians were queried about their satisfaction with the procedure and ability to communicate with one another.

- While pre-procedural stress levels were comparable, midazolam reduced patient stress more than music.
- Patients were more satisfied having had midazolam; physicians were satisfied irrespective of the use of midazolam or music
- Patients and physicians both found communication more difficult when music was employed
- There were no differences in vital signs using either of the regimens.
The researchers concluded:

“Music medicine offers an alternative to intravenous midazolam prior to single-injection peripheral nerve block procedures. The results of the current study have to be cautiously interpreted....”

The statement is accurate but disingenuous. Music is an alternative; it just happens to be a lousy alternative based on the study’s results. The authors do offer some reasons why the results were not dramatically better. For communication, that may have been due to the use of noise-canceling headphones, all the better to hear the music. The music chosen was not what the patient felt would relax them, but a song by Marconi Union, Weightlessness. [1]

The most glaring concern was why 3 minutes of music, why not longer, say the 20 minutes usually noted in the literature “to reap the benefits of [music] anxiolysis…”? The authors first suggest the choice of time frame was because intravenous midazolam is well on its way to reducing stress in three minutes. A few paragraphs later, the real reason appears because it “was not possible due to adherence to operating room efficiency and timely patient readiness.” Translated, “time is money, and you are wasting time.”

The study confirms that efficiency and dollars trump some forms of medical care – for both good or bad, but you already knew that. It doesn’t make a good case for music anxiolysis. Why would a journal publish this work? Could it be because it shows “they care” and are looking for ways to substitute non pharmacologic treatments for potentially harmful pharmacologic ones? Maybe they had extra room. This was a study from the University of Pennsylvania, ranked #3 as a medical school for research. Did their institutional review board (IRB) consider, based on the protocol submitted, the inherent limitations of a study where one treatment, music therapy, is applied for only 10% of the time necessary to obtain a result? Does the IRB have a role in stewardship of research resources, or did they content themselves in determining that there were no ethical issues?

[1] The body of this research includes a citation that this song, studied in a research laboratory, reduced anxiety by 65% and reduce vital signs (heart rate, breathing) by 35%. I followed the citation back, and it was a marketing firm’s research laboratory, and the stress was solving puzzles, not getting stuck with needles. And other than those two reported results, there was no supporting data to be found.

Source: Music versus Midazolam during preoperative nerve block placements: a prospective, randomized controlled study  Regional Anesthesiology Pain Medicine DOI: 10.1136/rapm-2018-100251