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How to Manage Post-op Pain and Nausea

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Undergoing surgery is never an easy experience, but it can become exponentially worse when patients experience significant pain or nausea post-operatively. Fortunately, by preparing your patients and taking aggressive pre-emptive measures, you can ensure that their recoveries are brief and comfortable and keep your PACU costs to a minimum.

We asked several experts how they manage and minimize post-op pain and nausea through all phases of the surgical process. Here's what they had to say.

Pre-operative: Patient Education

Studies show that patients who know beforehand that they may experience pain after surgery are able to deal with these complications and return home much more quickly. Unfortunately, very few surgeons and anesthesiologists actually warn patients that they will experience post-op pain, says Alan Kwon, MD, Medical Director for the Kennedy Surgical Center in Sewell, NJ. He emphasizes the importance of discussing the following points with your patients:

- how much pain they are likely to experience;
- where it will occur; and
- how long the pain is likely to last.

Make sure patients understand their options

It's also important to discuss anesthesia options with patients, offering alternatives or a combination of techniques, says Adam Dorin, MD, Medical Director and the Chief of Anesthesia for the Surgery Center of Chevy Chase in Maryland. This is not to say that patients should have total control over their anesthesia care, but the anesthesia provider should consider their preferences. If, for example, the patient wants to forego a regional block in favor of being put to sleep, says Dr. Dorin, the anesthesia provider should take that into account, as long as the patient's request is within the boundaries of safety.

Give clear post-op instructions.

Dr. Dorin stresses the importance of talking to your patients about the potential side effects of prescribed pain medications, including nausea, vomiting, constipation, and drowsiness. To obtain pain relief with as few side effects as possible, he recommends telling your patients to try to control their pain first with NSAIDs or extra-strength Tylenol. Taking a couple of Tylenol as soon as they get home from surgery may help pre-empt pain and the need for stronger medications.

"Prescribed pain medications are 'as needed' meds," says Dr. Dorin. "They should be taken only when they are absolutely needed for pain relief. If the pain persists and is still too intense after taking extra-strength Tylenol, the patient should start off with just half of a pill, and no more than one full pill, of the prescribed medications."

Patients must decide for themselves how much pain they can endure versus how much medicine-induced nausea they can withstand, says Dr. Dorin. He believes that most patients will prefer one night of minimal discomfort to a night of nausea.

Nancy Burden, RN, director of Trinity and Bardmoor Outpatient Surgery Centers in Florida, agrees that pain management varies widely among individuals. "Some patients will get sick just looking at pain medicine," she jokes, "while others can take pill after pill without any adverse side effects." Put as much of the control back into the hands of your patients as possible, she recommends, and let them determine their own personal balance between pain relief and potential side-effects of pain medicine.

All of our experts agree that you should advise patients to take some form of pain medicine, prescribed or over-the-counter, at the first sign of pain, before it becomes extreme. Severe pain is very difficult to control.

Identify patients at risk for PONV.

Ms. Burden also suggests that you identify patients who are at particular risk of post-operative nausea and vomiting (PONV) so you can be prepared to supplement their pain medication with an anti-emetic.

You can pinpoint at-risk individuals by both the type of procedure they will be undergoing as well as by specific patient criteria. For instance, patients with a history of motion sickness and younger women tend to be more likely to experience PONV, says Ms. Burden. Patients who undergo laparoscopic surgery, who have tonsil, nose or sinus surgery in which there may be bleeding in the nose, and children who have eye surgery are also at greater risk. In contrast, patients who undergo hand, foot, or cataract surgery almost never suffer from PONV and may be able to be "fast-tracked" to a phase II PACU.

Intra-Operative: Anesthetic Agent Selection

The anesthesia agents and methods your providers use are the most important factors in preventing adverse post-op symptoms. All of our experts suggest supplementing general or replacing general anesthesia with a local anesthetic or a regional block when possible. This markedly decreases the amount of general anesthesia needed, which minimizes post-op pain and nausea, says Dr. Kwon. A good block can also provide post-op pain relief for hours after the procedure.

To provide continuous pain relief after particularly painful procedures such as rotator cuff surgery, your anesthesia provider may want to consider implanting a pain pump filled with a low-dose local anesthetic. Pain pumps are usually removed within 48 hours, but can be left in place for up to five days, says Dr. Kwon. Disposable pumps can cost anywhere from \$50 to \$100, but he believes they may be well worth the expense, especially if they reduce PACU staffing costs.

Post-operative: Assess and Treat Patients, and Re-state Recommendations

Immediately after surgery, when patients are just regaining consciousness, ask if they are experiencing any pain, advises Dr. Dorin; they may be groggy, but they'll still be capable of answering. If the answer is yes, administer IV pain medication. This pre-emptive measure ensures that they'll be as comfortable as possible when they are fully awake, responsive, and stable.

Before resorting to anti-emetics, there may be several steps you can take to avoid nausea altogether, experts suggest. For example, one of the biggest mistakes nurses make, says Ms. Burden, is letting patients sit up too quickly. That little bit of movement may be all it takes to induce vomiting in a patient who is bordering on being ill. Instruct patients to lie still until they are fully awake. Also, administer proper pain control and IV fluids, says Dr. Dorin. Often, nausea symptoms will resolve on their own. If they don't, then consider an anti-emetic, he says.

Instruct PACU nurses to start off with weaker anti-emetics first, before moving on to stronger treatments, opines Dr. Dorin. Less potent anti-emetics lead to fewer sedated patients, and they're also less expensive than the stronger variety. Dr. Dorin recommends first administering 10 mg of Reglan for an adult of average weight; the cost is a few cents per dose. A dose of 0.675 mg to 1.25 mg of Droperidol is comparable, and some studies even indicate that it may be slightly more successful, but it sedates patients more than Reglan, says Dr. Dorin. If, after these measures, the patient is still in need of rescuing, try 4 mg of Zofran. This will typically cost between \$14 and \$16 per dose. As a last resort, Dr. Dorin suggests using a combination technique of 25 mg of Ephedrine and 12.5 mg of Phenergan for adults of average weight. Although this technique only costs a few dollars, it is almost always effective and causes only minimal sedation. However, this combination needs to be intra-muscularly injected, which makes it less desirable for patients.

Before discharging patients, our experts recommend summarizing your earlier pre-operative discussion regarding at-home post-op pain control options. It's also a good idea to make sure accompanying family members and/or friends are present and that they understand your recommendations as well. Standard instructions may include:

- Advising patients to refrain from drinking, driving, or making important decisions for at least 24 hours.
- Recommending that patients start taking Tylenol in the correct weight-adjusted dose every six hours prior to other agents wearing off.

- Instructing patients to apply ice to help with pain and swelling. "We give all our orthopedic patients bags of ice to take home if they live less than 20 minutes away," says Mary Louise Dietrich, Director of the Coordinated Health Systems Ambulatory Surgery Center in Bethlehem, Pa. "If they live further away from the facility, we instruct them to make ice packs by putting ice in a plastic bag, and then placing the bag in a pillowcase or cloth to avoid frostbite injury to the skin. If patients don't have an icemaker, a bag of frozen peas is an excellent substitute." The ice pack must mold easily to the body part, which is why frozen peas work well, says Ms. Dietrich.

Completely eliminating post-operative pain is not always a realistic goal. However, there is no reason why patients should experience any significant discomfort while in your facility, nor should they experience anything other than minimal discomfort at home. By managing your patients with a thoughtful approach to anesthesia and an aggressive pre-emptive approach to pain and nausea, you'll keep your PACU costs down and ensure that patients come out of surgery as comfortable as possible.

Suggested Anti-Nausea Technique

Adam Dorin, MD, Medical Director and the Chief of Anesthesia for The Surgery Center of Chevy Chase in Maryland recommends the following anesthetic regimen to eliminate post-op nausea associated with general anesthesia:

1. Use shorter-acting inhalation agents such as Sevoflurane and Desflurane ideally at or below 50 percent minimum alveolar concentration as maintenance anesthesia.
2. Use 100 mcg to 125 mcg of Propofol per kilo per minute as maintenance anesthesia.
3. Use pure oxygen or oxygen combined with air; avoid use of nitrous oxide due to its inherent complications such as increased nausea and vomiting and bowel distension.
4. Suction your patients' stomachs to remove gastric fluid as this can lead to nausea. Suctioning is an absolute must in ENT cases in which blood can be present in the stomach.
5. Use low amounts of narcotics with surgeon-administered local anesthetics intra-operatively (e.g. in a two hour case 100 to 150 mcg of Fentanyl should be more than adequate).
6. Give your patients 10 mg of Reglan (facilitates gastric emptying) and 4 mg of Zofran (anti-emetic) pre- or intra-operatively.
7. Towards the end of the case, allow as much of the muscle relaxant to wear off as possible, and use the minimal amount of reversal agent required (reversal agents have been shown to contribute to post-op nausea).