Concomitant Use of Spasmolytics and Opioids for Postoperative Pain After Foot and Ankle Surgery

Fair or Foul?

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Skeletal muscle relaxants are medications that affect skeletal muscle function and decrease muscle tone; they may be used to alleviate symptoms such as muscle spasms, pain, and hyperreflexia.1 The term muscle relaxant primarily refers to two major therapeutic groups: neuromuscular blockers and spasmodetics. Carisoprodol, cyclobenzaprine, methaxalone, and methocarbamol are examples of spasmodetics that are commonly prescribed to relieve painful musculoskeletal conditions,1 particularly muscle spasms, and may also help with improving movement and range of motion,2 which coincide with AO principles.3 Furthermore, spasmodetics may also be useful in combating the US opioid epidemic because they can potentially reduce the need for higher-dose opioids, which are associated with addiction and an increased risk of opioid overdose4; the benefits of multimodal analgesia are well documented in the literature.5 Podiatric physicians who are continuing to develop and add to their analgesic armamentarium to effectively treat their patients’ pain should familiarize themselves with the short-term use of spasmodetics in the context of concomitant prescribing with opioids because opioid therapy is a cornerstone of the pharmacologic management of acute and chronic pain.6,7

We know that clinically meaningful variation exists in postoperative pain management in foot and ankle surgery.8-11 In addition, research from the University of Florida estimated that 10% to 30% of prescription opioid users also use some form of a neuromuscular blocker or a spasmodetic.12 Brooks et al9 conducted an investigation using data collected from 860 podiatric physician respondents and determined that 2% to 10% (n = 18–87) prescribe spasmodetics with opioids for various foot and ankle surgeries. The investigation by Brooks et al9 was based on the earlier study by Hearty et al11 (n = 64) using the same scenarios, which allows for an apples-to-apples comparison between podiatric physicians and orthopedic physicians. Hearty et al13 demonstrated that 3% to 13% of orthopedic physicians prescribed spasmodetics, which is similar to what podiatric physicians prescribe.9 The top two opioids prescribed by podiatric physicians concomitantly with spasmodetics are hydrocodone and oxycodone.9

One explanation for why so few podiatric physicians prescribe spasmodetics might be recommendation 11 from the Centers for Disease Control and Prevention (CDC) 2016 Guidelines for Prescribing Opioids for Chronic Pain.6 The CDC advises against prescribing spasmodetics and opioids concurrently due to concerns of additive central nervous system depressant effects on brain function4; this recommendation, in part, was based on the work of Park et al,14 which found that concomitant benzodiazepine use with prescription opioids was associated with almost four times the risk of overdose death compared with opioid use alone; however, correlation is not causation, and the specifics matter. Park et al14 examined a veteran population in 2004–2009 and did not differentiate between short- and long-term use; Park et al14 point out that a daily dose–dependent association does exist. That is important because certainly the dose of any drug matters. Paracelsus is credited with the classic toxicology dictum, “What is there that is not poison? All things are poison, and nothing is without poison. Solely the dose determines that a thing is not a poison.”15(p126) The CDC guidelines for chronic pain offer very little in terms of recommendations for acute pain, dodging the topic of morphine milligram equivalents for acute or postoperative pain altogether.4 Note that concomitant use of spasmodetics and opioids can be safe and effective for acute pain for certain patients.16

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A 2020 study by Li et al.\(^\text{16}\) which assessed the medical records of almost 20 million patients, found that short-term concomitant use of spasmolytics (ie, ≤2 weeks) and opioids posed no greater risk of overdose than using opioids alone. Li et al.\(^\text{16}\) upheld the CDC’s concerns for long-term use of spasmolytics with high-dose opioids. Specifically, Li et al.\(^\text{16}\) note that “this risk seemed to increase with treatment duration (≤14 days: 0.91; 95% CI [confidence interval], 0.67–1.22; 15–60 days: 1.37; 95% CI, 0.81–2.37; >60 days: 1.80 and 95% CI, 1.30–2.48). Concomitant users with daily opioid dose ≥50 mg (1.50; 95% CI, 1.18–1.92).” When examining particular muscle relaxants, baclofen and carisoprodol were associated with an increased risk of complications; podiatric physicians should proceed with caution using these two drugs with opioids. Finally, Li et al.\(^\text{16}\) note that both higher-dose opioids and combining opioids, spasmolytics, and benzodiazepines were associated with increased complications and unsafe.\(^\text{16}\) Podiatric physicians should avoid this triple combination.

In conclusion, podiatric physicians should avoid prescribing certain spasmolytics with opioids, particularly carisoprodol and baclofen. Prescribing other spasmolytics and opioids prescribed concomitantly for short-term (ie, ≤14 days) postoperative pain may be beneficial for certain patients. It remains up to the podiatric physician to assess their patients’ opioid history, pain tolerance, and comorbidities to formulate a patient-centric and procedure-focused approach to determine which nonopioid analgesics and opioids are best for managing their patients’ postoperative pain.\(^\text{17–20}\)

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