Are Cox-2 Inhibitors Safe For Managing Dental Pain?

With all the recent press on Vioxx, a specific brand name type of a Cox-2 inhibitor, being pulled from off the market and its possible adverse side effects it begs the question are Cox-2 inhibitors a safe and effective drug for managing dental pain. This article will explore the benefits and risks involved with Cox-2 inhibitors as analgesic agents in controlling post treatment dental pain. The six Cox-2 inhibitors available today are Celebrex, Vioxx, Bextra, Mobic, Dynastat, and Arcoxia. Pfizer produces Celebrex, Bextra and Dynastat while Merck produces Vioxx and Arcoxia and Boehringer Ingelheim produces Mobic.

The Cox-2 inhibitors widen the spectrum of pharmacological management of pain and inflammation (swelling) for many patient groups. Prior to Cox-2 inhibitors patients were exposed to harmful side effects associated with the long-term use of nonselective NSAIDS (nonsteroidal anti-inflammatory drugs) such as gastric perforations, ulcers, and bleeding or the risk of addiction with the long-term use of narcotics. The Cox-2 inhibitors offer greater safety in conjunction with comparable efficacy than simpler NSAIDS in managing pain, including acute dental pain. The Cox-2 inhibitors are the medication of choice for patients with gastric disease for both prophylactic or post-treatment analgesic pain management.

This being said there are adverse consequences to the indiscriminate use of Cox-2 inhibitors. If a patient is being treated with warfarin and has atrial fibrillation or prosthetic valve replacement Cox-2 inhibitors are an inappropriate choice of analgesic. The Cox-2 inhibitors also promote renal ischemia in patients with compromised kidneys thus inducing an elevation in blood pressure and peripheral edema in patients. For patients taking beta-adrenergic blocking drugs or angiotensin-converting enzyme, or ACE, inhibitors for hypertension the Cox-2 inhibitors may even induce congestive heart failure. Patients with a history of asthma or with nasal polyps often have a hypersensitivity to aspirin and other NSAIDS leading to airway edema, so most Cox-2 inhibitors should be avoided. However, most of these patients can tolerate Vioxx.

Comparison of analgesic efficacy and pain management are of primary concern to patients before and after dental treatment between Cox-2 inhibitors, other NSAIDS, narcotics and acetaminophen or Tylenol. In dental extraction studies based on third molar or wisdom teeth extractions a 400 mg dose of Celebrex was inferior to that of 400 mg dose of ibuprofen for controlling post-treatment pain, while a 50 mg dose of Vioxx had analgesic effects equivalent to 550 mg of naproxen or 400 mg of ibuprofin. In a clinical trial where acetaminophen was used to alleviate post-treatment pain in patients undergoing impacted third molar extractions more than 75 percent of these patients required analgesic rescue medication, demonstrating that acetaminophen has an analgesic ceiling effect. Acetaminophen also demonstrates another critical disadvantage because it causes severe hepatic (liver) damage even at therapeutic doses in chronic alcohol users.

The pharmaceutical properties of Cox-2 inhibitors include analgesic, anti-inflammatory and gastro protective properties that can also have the undesirable effect of disrupting the delicate hemodynamic balance in patients. So that symptomatic and asymptomatic gastroparetic patients who do not have severe cardiovascular, cerebral or renal ischemic disease benefit from the use of Cox-2 inhibitors. However, the long-term use of Cox-2 inhibitors in medically compromised patients may prove disastrous.

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