

Management of postoperative dental pain

Akhter R¹, Kabir MH², Rahman AFMS³, Halim MA⁴, Rahman S⁵, Manjur T⁶, Zaman W⁷

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Treatment of pain and suffering should be a priority for all clinicians. In dental practice we use analgesics for postoperative pain management. Numerous analgesics are available for use. The purpose of this article is to provide a brief review of the drugs that should be considered for the management of postoperative dental pain.

Acetaminophen: It has analgesic and antipyretic properties. It has less side effects than nonsteroidal anti-inflammatory drugs (NSAIDs). Acetaminophen is a drug of choice if NSAIDs are contraindicated.¹ In severe pain acetaminophen alone is not sufficient. It may be used in combination with opioids such as codeine and oxycodone.

NSAIDs: It is effective for the management of any level of dental pain.² It has analgesic and anti-inflammatory action. Acetylsalicylic acid (ASA) is a well-known antipyretic and is widely used for its antiplatelet action for prophylaxis of myocardial infarction in patients with a history of unstable angina pectoris or with a history of myocardial infarction.³ In severe pain where acetaminophen is insufficient and patient has gastric ulcer then we consider a selective Cox-2 inhibitor like celecoxib, rofecoxib or etoricoxib.⁴ Ketorolac tromethamine is a NSAID which is used in postoperative dental pain

and administered by oral or parenteral route but not exceed 5 days.⁵

Therapeutic doses: Acute pain in adults with moderate to severe pain following oral surgery reduces after administration of ibuprofen 400 mg, diclofenac 50 mg, etoricoxib 120 mg, codeine 60 mg plus acetaminophen 1000 mg, celecoxib 400 mg, and naproxen 500/550 mg.⁶

Adverse effects: NSAIDs cause dyspepsia to more seriously gastric bleeding. Acetaminophen has less side effects but excessive doses can lead to irreversible liver damage. Long-term use of acetaminophen or NSAIDs should be avoided as it may lead to renal toxicity.⁷

Drug interactions: Long-term use of NSAIDs diminishes the action of antihypertensive drugs like angiotensin-converting enzyme inhibitor (enalapril), diuretic (hydrochlorothiazide) and beta-blocker (propranolol).⁸ Patients on an anticoagulant like warfarin and powerful antiplatelet drugs like clopidogrel which are used to prevent acute coronary syndrome or stroke will be susceptible to increase bleeding and ASA in particular must be avoided. ASA should be avoided in diabetic patients taking oral hypoglycemics.⁹

Prescribing considerations: NSAIDs can be more effective analgesics if they are given early and in sufficient doses i.e. initial loading dose should be double the maintenance dose.³

Opioids: Opioid analgesics may be used to manage postoperative dental pain. It is considered when acetaminophen or NSAIDs alone is not sufficient. High doses are very effective for the relief of severe pain. But opioids have some unacceptable side effects. All opioids induce dose-dependent respiratory depression, sedation, constipation, nausea and vomiting.¹⁰

Opioids should be considered in dental pain only in combination with NSAIDs or acetaminophen. If it is used alone then codeine should be the first considered. If the codeine is insufficient the next opioids to consider is oxycodone. This drug is most commonly available with ASA or with acetaminophen.¹⁰

1. Dr. Rehana Akhter, BDS, MS, Assistant Professor, Oral and Maxillofacial Surgery Department, Shaheed Suhrawardy Medical College Hospital, Dhaka, Bangladesh.
2. Dr. Md. Humayun Kabir, BDS, DDS, Associate Professor, Head of Dental Unit, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh.
3. Dr. AFM Shahidur Rahman, BDS, MS, FCPS, Associate Professor, Head of Department of Oral and Maxillofacial Surgery, Shaheed Suhrawardy Medical College Hospital, Dhaka, Bangladesh.
4. Dr. MA Halim, BDS, MS (Thesis) OMS, Register, Department of Dentistry, SSMC, Mitford Hospital, Dhaka, Bangladesh.
5. Dr. Shameemur Rahman, BDS, MS, Assistant Professor, Oral and Maxillofacial Surgery Department, Shaheed Suhrawardy Medical College Hospital, Dhaka, Bangladesh.
6. Dr. Tanjiba Manjur, BDS, MPH, Senior Consultant and Head of Department of Dentistry, SSMC, Mitford Hospital, Dhaka, Bangladesh.
7. Dr. Wahiduzzaman, MS Resident, BSMMU.

Address of Correspondence: Dr. Rehana Akhter, BDS, MS, Assistant Professor, Oral and Maxillofacial Surgery Department, Shaheed Suhrawardy Medical College Hospital, Dhaka, Bangladesh. E-mail: interlifedentalhome@yahoo.com

Use of analgesics in pregnancy and lactation:

Management of dental pain in pregnancy is to remove the source of pain using local anaesthesia. If post operative pain present, an analgesic may be necessary. Acetaminophen is the analgesic of choice in all stages of pregnancy. ASA should not used in late pregnancy. NSAIDs may cause insufficient contraction during labour, increased during delivery or premature closure of the ductus arteriosus of the heart. NSAIDs are therefore contraindicated in the third trimester.

If acetaminophen is insufficient, opioids are considered during pregnancy. But they are given in short duration. Chronic opioids use can result in fetal dependence, premature delivery and growth retardation.¹¹

Acetaminophen is the analgesic of choice in lactation. Opioids are considered safe in lactation.¹¹

Use of analgesics for pediatric patients: In young patient ASA is contraindicated as it can induce Reye's syndrome. Acetaminophen is the drug of choice for the pediatric patient. For pain of higher level ibuprofen or codeine can be used.¹²

Use of analgesics for elderly patients: In elderly patient acetaminophen is the analgesic of choice. NSAIDs cause gastrointestinal bleeding if there is a history of gastric bleeding or if high doses of NSAIDs are used. If acetaminophen is insufficient then consider selective COX-2 inhibitor over other NSAIDs. Opioids has profound adverse effects and prolonged duration of action. Therefore it is best not to select an opioid.³

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