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Mini Review

Comparison of the Effect of Acetaminophen, Ibuprofen, and the Combination of these Two Drugs in Relieving Toothache in Children

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Abstract

Controlling toothache in children is one of the problems that always frustrate parents, and this is the question that parents always ask dentists about which pain reliever works best. Different medications are used to relieve toothache. Ibuprofen is a non-narcotic analgesic and Acetaminophen is used as one of the most widely used analgesics to relieve toothache.

The effects of nonsteroidal anti-inflammatory drugs (NSAIDs) on pain control are different, and because the analgesic effects of the two drugs are close, pediatric dentists prefer to prescribe acetaminophen due to the side effects of ibuprofen.

In this article, we intend to make a brief comparative study of the effect of these two drugs in relieving toothache in children.

Keywords: *Toothache; Pain Reliever; Ibuprofen; Acetaminophen; Analgesics; Pain Control*

Introduction

Children may experience pain during tooth decay or after certain dental procedures. Mostly, the pain threshold decreases with age, and personal control over pain becomes more effective. A similar process of personal control is observed in young dental patients. To relieve and reduce pain, parents and dentists usually resort to painkillers.

Pain should be relieved by analgesics without any noticeable changes in consciousness. Narcotic analgesics in the CNS and non-narcotic analgesics act peripherally at the nerve endings. Most toothaches in children can be tolerated with non-narcotics and with relatively low potency [1].

Acetaminophen is the most common analgesic used for children in the United States. It is an effective analgesic that has the same potency as aspirin to treat mild to moderate pain. Unlike Aspirin, acetaminophen does not inhibit platelet function and is less likely to cause intestinal disorders, and also does not cause Rey Syndrome in children [2]. The recommended dose of acetaminophen for children is 10 to 15 mg/kg every 4 to 6 hours [3].

Ibuprofen is a non-steroidal anti-inflammatory drug and is a non-narcotic analgesic. Dosage for children is 4 to 10 mg/kg every hours [4].

An overview of some of the studies

There have been studies on the effectiveness of acetaminophen, and Ibuprofen in reducing pain in children that some of them are discussed below.

McGaw., *et al*. indicated that ibuprofen was more effective than acetaminophen in reducing postoperative pain in children after tooth extraction [5]. In another study, researchers found that acetaminophen and ibuprofen had a similar effect on mild to severe pain in children [6]. Although one study revealed there was no difference between the effect of acetaminophen and ibuprofen on reduction after tooth extraction [7], but in another study, Dionne and colleagues showed that the combination of acetaminophen and ibuprofen had a stronger effect on pain relief [8].

In a study conducted by Pahlavani and her colleagues at the Pediatric Department of Hamadan Dental School, they concluded that there was no difference between acetaminophen at a dose of 10 mg/kg and ibuprofen at a dose of 5 mg/kg in terms of pain relief [9].

But in another study, Perrott., *et al*. stated that acetaminophen at a dose of 7 - 15 mg/kg and ibuprofen at a dose of 4 - 10 mg/kg had a similar effect in relieving mild to severe pain in children [6].

Pahlavani., *et al*. recommended that acetaminophen should be used to relieve pain in children due to its lower drug side effects [9].

The use of preoperative analgesics has the potential to reduce postoperative discomfort and intraoperative pain. Ashley and his colleagues reviewed the evidence if the preoperative analgesics are effective for pain relief in children and adolescents undergoing dental treatment or not.

They concluded that children might experience less pain in using preoperative analgesics before orthodontic separator placement. They could not reach strong conclusions regarding the advantages of using analgesics before restorations, or tooth extraction under local anesthetic. Finally, they were not able to determine which one of the analgesics is the most effective [10].

Hyllested indicated Paracetamol is an alternative to NSAIDs due to its low incidence of side effects. It may be appropriate to combine paracetamol with NSAIDs, but future studies are required. Furthermore, the combination use of these analgesics should be investigated with a specific focus on a potential increase in their side effects [11].

Summary

To relieve toothache in children, usually, painkillers such as acetaminophen and Ibuprofen are prescribed, but according to studies, the effects of each of them on pain control can be different. Some researchers recommend either of these two drugs alone, but several studies have emphasized the combined use of the two drugs.

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