Evaluation of prophylactic piroxicam -FDDF and azithromycin administration in impacted lower third molar surgery.

Thesis

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Dedication

To my parents, the dearest persons to my heart.

To my loving husband.

To my beloved Amr and Ahmed.

To my sweetheart Lojine.

And to my sisters.

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I am deeply grateful to **AIIAH** who stood by me all along, with my great appreciation and thanks for achieving my goals in my life.

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FDDF : Fast dissolving dosage formulation.

NSAIDs : Non steroidal anti inflammatory drugs.

VAS : Visual analogue scale.

COX -1 : Cyclooxigenase-1 enzyme.

COX-2 : Cyclooxigenase-2 enzyme.

ACE I :Angiotentensin-converting enzyme inhibitors


Introduction

Introduction

Impacted lower third molar surgery is the most common procedure performed by oral and maxillofacial surgeons. A thorough understanding of the complications associated with this procedure will enable the practitioners to identify and counsel high risk patients, manage more common complications, and be cognizant of less common sequelae and the most effective methods of management.

The surgical removal of mandibular third molars involves trauma to both soft and bony tissues followed by postoperative complaint such as pain, trismus, swelling and pain on swallowing. Careful surgical technique and preoperative care can minimize the frequency of complications and limit their severity.

Treatment with non - steroidal anti - inflammatory drugs (NSAIDs) and antibacterial agents may play an important role in prophylactic therapy preceeding or following oral surgery. Several NSAIDs have been used for pain, trismus and swelling

control after lower third molar surgeries. The therapeutic effect of these medications is based on the inhibition of cyclo-oxygenase enzyme that converts arachidonic acid to prostaglandin endoperoxides [(1)]. The prostaglandins are synthesized rapidly following tissue injury and appear in significant concentrations just one hour after trauma and have an important role in inflammation as they increase pain and swelling.

NSAIDs when administrated preoperatively can be absorbed and distributed to oral tissues before the initiation of surgical trauma, thus ensuring a blockage of arachidonic acid pathway with reduction in the postoperative swelling, discomfort and pain [(2)].

Piroxicam is a NSAIDs with prolonged plasma half - life following oral administration. Fast dissolving dosage formulation of piroxicam (piroxicam - FDDF) is suitable for sublingual administration and effective in treatment of postoperative oral Pain [(3)].

The administration of prophylactic antibiotics to patients undergoing surgical procedures is a highly recommended practice. Antibiotic may counteract the onset of infectious focci at the surgical site as well as their systemic extension [4]. In the last decade, the use of macrolide antibiotics in dentistry has been encouraged due to their therapeutic advantages such as broader antibacterial spectrum, improved tissue distribution and low incidence of adverse effects [5]. Among these, azithromycin represents an interesting option, since it has an extended antimicrobial spectrum, favorable disposition into normal and pathological periodontal tissue and effective in treatment of odontogenic infection [6, 7].

Review of Literature

Review of literature

The term "impacted tooth" refers to the tooth which is completely or partially unerupted due to mechanical hindrance from adjacent tooth, bone, soft tissue or pathological condition so that its further eruption is unlikely.

The incidence of impacted lower third molar has been addressed in several studies, **Dachi and Howell** [8] evaluated 3874 full mouth radiographs of Indian patients and found that (16.7%) of this sample had at least one impacted third molar. **Morris and Ferman** [9] noted that the incidence of impacted lower third molar in 5600 patients of adult age was (65.5%). In 1989 **Elissson**, **et al** [10] noted that the incidence of impacted lower third molar in 2128 patients was (30.3%), while **Garcia and Chuancy** [11] in their study eruption of third molars in adults found that only (11.7%) of 829 patients had one or more impacted lower third molars. Recently, **Grover and Lorton** [12] in 2001 examined 5000 army recruits and found that the maxillary and mandibular third molars were the most commonly impacted.

The mandibular third molar is the most commonly impacted tooth. It also presents the greatest surgical challenge. When the third molar should be removed the surgeon needs to have a clear understanding of the development and movement of the third molar. A number of studies [13-16] have clearly defined the development and eruption pattern of the third molar. The mandibular third molar tooth germ is usually visible radiographically at age 9 years and cusp mineralization is completed approximately 2 years later. At age 11 years, the tooth is located within the anterior border of the ramus with its occlusal surface facing anteriorly.

Crown formation is usually completed at age 14 years, and approximately 50% of the roots are formed at age 16 years. During this time the body of the mandible grows in length at the expense of the resorption of the anterior border of the ramus. As this process occurs the position of the third molar relatively to the adjacent teeth changes, with the third molar assuming a position approximately at the root level of the adjacent second molar. The angulation of the crown becomes more horizontal