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EFFECTIVENESS OF ANALGESIA IN YOUNG CHILDREN POST TONSILLECTOMY- CASE STUDY AFRICA HOSPITAL

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ABSTRACT

Tonsillectomy is one of the most frequently performed ambulatory surgical procedures; it may result in severe pain postoperatively. This pain has negative impact on the patient's well being, and may also impair swallowing, leading to an increased risk of secondary infections, bleeding, and dehydration. Different analgesics can be used to reduce pain post operatively e.g. NSAIDs and paracetamol. This study aimed to assess the effectiveness and safety of analgesics used for management of post operative pain in young patients undergoing tonsillectomy. The study included 80 patients admitted to Africa Specialized Hospital at Khartoum State, Sudan, between November to December 2017. The data were collected using information sheet and then analyzed using (SPSS version 24). The majority of patients (51.3%) were school aged (6-12 years). The population was equally divided between boys and girls. The whole population used non-steroidal anti-inflammatory drugs (NSAIDs) (70% used ibuprofen syrup) for analgesia except the asthmatics were given paracetamol. Pain score immediately after surgery and two hours after ranged from mild 36.5% to moderate 40%, only 5% were free from pain. The majority of children (86.3%) experienced pain on swallowing after surgery and 96.3% 2hrs later. Pain assessment after a week from the procedure showed that 78.7% of patients were free from pain. There were significant association between dosage forms, age and pain score. The incidence of nausea, vomiting and bleeding was less frequent in the population indicating safety of analgesics used.

KEYWORDS: Tonsillectomy, pain, analgesic, NSAIDs, ibuprofen, paracetamol.

INTRODUCTION

Tonsillectomy is a surgical procedure performed with or without adenoidectomy that completely removes the tonsil including its capsule by dissecting the peritonsillar space between the tonsil capsule and the muscular wall[1]. Tonsillectomy is associated with morbidity that includes possible hospitalization, risks of anaesthesia, prolonged throat pain, and financial costs. Commonly bleeding may occur during or after the surgery. The rate of primary hemorrhage (within 24 hours of surgery) has ranged from 0.2% to 2.2% and the rate of secondary hemorrhage (more than 24 hours after surgery) from 0.1% to 3%[2]. Postoperative complications include nausea, vomiting, pain, dehydration, referred otalgia, postobstructive pulmonary edema, velopharyngeal insufficiency, and nasopharyngeal stenosis. Complications are more common in patients with craniofacial disorders, Down syndrome, cerebral palsy, major heart disease[3,4].

Pain following tonsillectomy has predictable characteristics; it is prolonged, duration relatively constant in nature, moderate to severe intensity which suggest that scheduled dosing may be efficacious. Therefore treatment of pain and suffering should be a priority aiming to minimize moderate and severe pain safely in all children, bring pain rapidly under control and to continue pain control after discharge from hospital[5].

Multi-modal analgesia has been shown to work well for nearly all cases. In many patients acute pain is managed by co-analgesia based on four classes of analgesics, namely local anaesthetics, opioid, nonsteroidal anti-inflammatory drugs (NSAIDs), and paracetamol[6].

The analgesic potency of acetaminophen is relatively low and its actions are dose-related, with a ceiling effect. It can be used to treat or prevent most mild and some moderate pain. In combination with either NSAIDs or weak opioids, such as codeine, it can be used to treat or prevent most moderate pain[7,8]. Doses of 50 mg/kg were found to be effective as diclofenac[9].

NSAIDs are important in the treatment and prevention of mild or moderate pain in Children, they have slightly better analgesic profile compared to paracetamol. However, combination of NSAIDs with acetaminophen paracetamol produce better analgesia than either alone[10,11,12]. They are safe drugs but commonly reported to cause bleeding, gastrointestinal disorders, skin, central nervous system, and renal problems[13].

Morphine is the most commonly used opioid μ agonist, however, no real correlation has been found between the drug dose, pain intensity, and clinical outcome[14,15]. It was effective in relieving postoperative pain but no better than other analgesics such as paracetamol, nonsteroidal anti-inflammatory drugs (NSAIDs), and regional analgesia[16].

Oral opioids are available (e.g. hydromorphone, Oxycodone). They represent a useful Alternative to intravenous morphine, but they have limit use in the period immediately following surgery[17].

Objective

To assess the effectiveness of analgesics used in post tonsillectomy.

METHOD

This is a descriptive cross sectional, hospital based study that included all patients less than 18 years subjected to tonsillectomy (80) at Africa Specialized Hospital during November to December 2017. Data was collected by direct interview with patient and their parents using Pre-tested and pre-coded design questionnaire and pain scales: face, and face, legs, activity, cry and consolacility (FLACC) scale. The FLACC is an interval scale that measure pain with total score 0-10, it is validated for assessment of post operative pain in children ages of 2 month to 7 years[18,19]. Three pain scores were recorded: one immediately after the surgery, another two hours after and the third a week after.

RESULTS

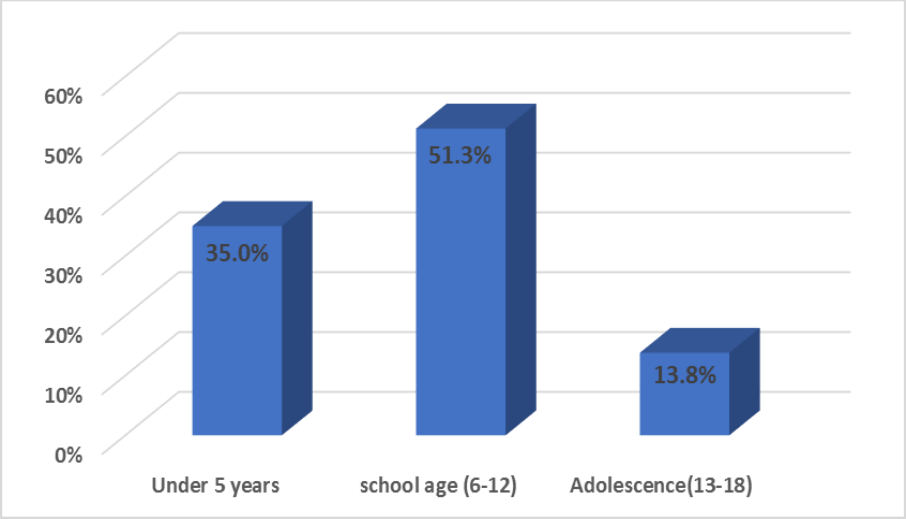

Fig. 1 Age of patients.

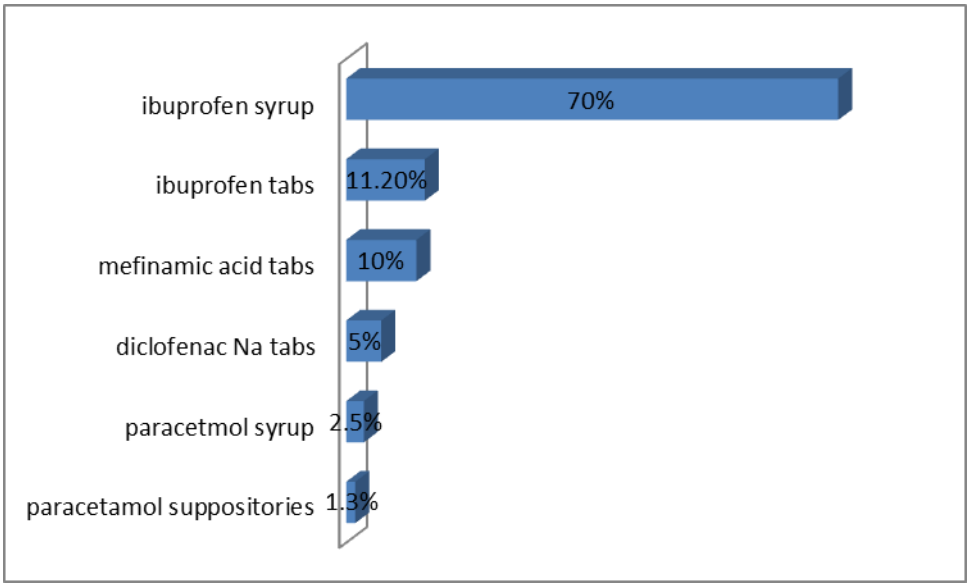

Fig. 2 Analgesics used postoperatively.

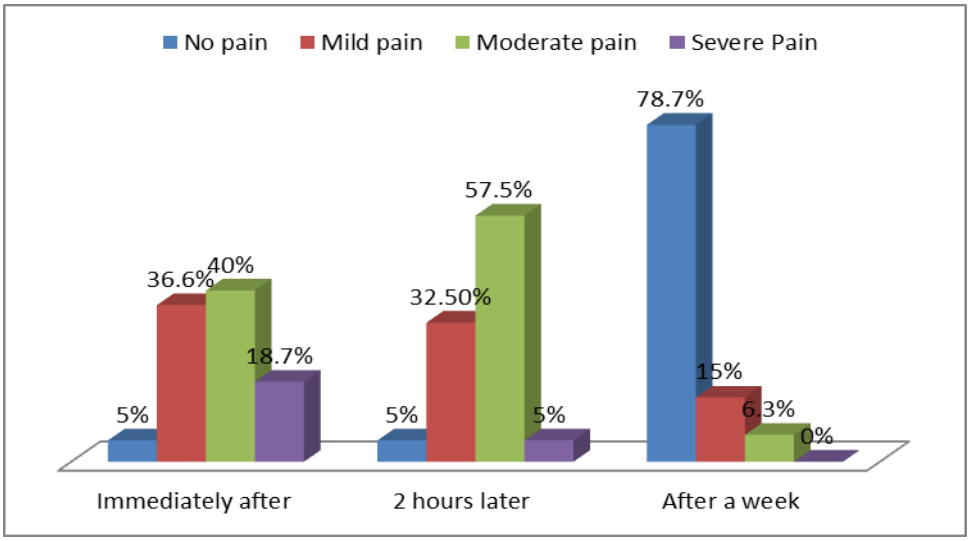

Fig. 3 Pain scores after tonsillectomy.

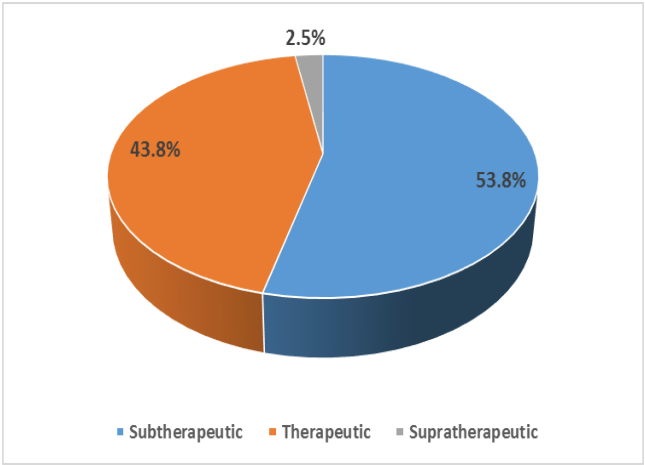

Fig. 4 Doses of analgesic according to weight.

DISCUSSION

The mean age of children was 7.75(±4) years with an equal number of boys and girls. About half (51.3%) of them were school aged children. The most common analgesic used were NSAIDs; ibuprofen syrup was prescribed and administered to 70%. Paracetamol was used only for asthmatic patients. Commonly the analgesic was administered three times daily (87.5%) for a period ranging from three days to seven.

Pain scores recorded after the procedure and two hours later ranged from mild to severe only (5%) were free from pain. It seemed that pain scores generally were higher two hours after the procedure. However, scores improved significantly after a week as the percent of patients free from pain reached (78.7%). This improvement is explained by healing. It is documented that the natural course of postoperative tonsillectomy pain follows a gradual decline for 1 week after surgery, but decreases more rapidly after this period[20].

This data reflects that children experience significant amount of pain in first 24 hours after tonsillectomy. The majority of children (86.3%) experienced pain on swallowing just after the surgery, and 96.3% two hours later. Therefore strong and effective analgesia is required as early as possible perhaps immediately after or during the procedure.

The incidence of nausea was 5% following procedure, 13.8% after two hours, and experienced only by 1.3% after a week. Vomiting occurred in 7.5% of children just after the surgery, 17.5% two hours later and by the same percentage after a week. The early development of nausea and vomiting might be due to anesthesia and the surgical procedure rather than a side effect of the used analgesics.

The incidence of bleeding was low on all three measurements (2.5%, 1.3% & 1.3% respectively) Suggesting that NSAIDs did not interfere with platelet function[21,22].

Doses for each analgesic prescribed were calculated according to weight and age following the pediatric BNF 2015 recommendation. Results displayed that 53% received sub therapeutic doses, and 2.5% took supra therapeutic doses. The relatively high incidence of pain experienced by children might be explained by use o lower than recommended doses. However, there was no significant association between doses and pain score, p values were 0.079, 0.097 & 0.106 for the three measurements respectively. It is worth mentioning that

patient taking liquid dosage forms showed significantly lower pain scores compare to children taking tablets (p value 0.0, 0 .011, 0.001 respectively).

There was a significant difference between pain scores after a week and ages of children (p value 0.001). Younger children showed improved pain scores probably Because they recover better than the older ones [21].

CONCLUSION

This study emphasized that pediatric tonsillectomy is a painful procedure requiring proactive analgesic strategies to provide a good quality of post operative recovery. Effective analgesia that is initiated early is required especially on the day of the procedure. Perhaps parenteral dosage forms of paracetamol and NSAIDs and/or combination with opioids might be effective.

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