



Simple Extractions with & without use of pre and post operative Antibiotics: A randomized clinical study

Dr Parveen Akhter Lone, Professor And Head Department of Oral surgery & Maxillofacial surgery (OMFS), Indira Gandhi Government Dental College Jammu (IGGDC)

Dr Mohan Singh, MBBS, MHA, JK Health Service

Dr Mehnaz Nabi, House surgeon OMFS department, IGGDC Jammu

Dr Zubair Ahmed Janbaz, House surgeon OMFS department, IGGDC Jammu

Correspondence Author: Dr Parveen Akhter Lone, Professor And Head Department of Oral surgery & Maxillofacial surgery (OMFS), Indira Gandhi Government Dental College Jammu (IGGDC)

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Abstract

Aim and objective: The aim of our study is to assess the viability of post-operative antibiotic usage in checking the post-operative complications after simple exodontia. This study will appraise the effectiveness of antibiotics in reducing the post-operative complications by comparing the results of usage and non-usage of antibiotics after simple exodontia.

Material and methods: this study investigated a regimen by using antibiotic (Amoxicillin 500 mg tds) for 3 days in one group (control group) and no antibiotics in the other (study group). Both the groups were investigated on 4th post-operative day by the same observer for post-operative complications like pain, swelling, purulent discharge and dry socket. Analgesics were prescribed in both the groups.

Result: Overall no statistically significant difference was seen between the two groups.

Keywords: Unrestorable teeth, Simple exodontia, antibiotics, trismus, Dry socket.

Introduction:

Oral cavity is the gateway to the complex realm of human body. It has one of the most diverse spectrums of bacterial flora in the body [1]. Any operative procedure within the

oral cavity demands utmost care and management. When left unchecked it can contribute to local and systemic ill health [2]. Tooth extraction means removal of teeth from dentoalveolus & are done for many reasons like periodontal diseases, trauma, unrestorable teeth, for orthodontic & prosthodontic reasons, teeth associated with cysts & tumours, impacted teeth etc.

Foremost priority of the oral surgeon must be the prevention of wound infection. The process is complex and depends on the interaction of host, local tissue, microbial virulence factors antibiotic prophylaxis is only one relatively minor effort among numerous preventive measures. Use of antibiotics is justified in only certain cases like pericoronitis, facial space infections, and osteomyelitis [3].

Since the beginning of the 21st century, discovery of any new antibiotic hasn't come to fore. Injudicious use of antibiotics has given birth to the more threatening problem of antibiotic resistance. [4] Prescribing antibiotics following simple exodontia remains controversial topic as the practice of routine antibiotic prescription needs to be reviewed and curtailed. Bacteremia certainly occurs during simple exodontia [5]. Dental prescriptions may

account for as much as 7-9% of total prescriptions in primary care settings [6]. However, body's host response is more than sufficient to counter this level of Bacteremia. In developed countries the current trend is that antibiotics are not justified following simple tooth extraction [7]

Material and methods:

Design: the design is randomized control trial.

Setting: the setting is oral and maxillofacial department

Inclusion criteria:

- Both male and female patients
- Patients within age group of 15-70 years
- Patients with good systemic health (ASA I)
- Patients undergoing simple extractions..

Exclusion criteria:

- Trans alveolar extractions
- Patients with deciduous teeth
- Patients having systemic diseases
- patients who had taken antibiotics less than 5 days prior to the extraction
- patients with acute infections
- pregnant patients

This prospective study includes all extractions that were performed in the oral surgery department using the following aseptic surgical protocol. Extractions were done employing minimal instrumentation using a mucoperiosteal elevator, straight elevator (wherever required & indicated), and forceps. Homeostasis was achieved using a cotton pressure pack. Postoperative instructions were given to every patient and patients were asked to strictly adhere to the instructions. Refraining from spitting, rinsing, and sucking, advised to take a soft diet and avoid hot food for at least 24 hours following the extraction, avoid smoking and drinking alcohol for at least 5 days. Patients were recalled on 3rd and 5th post-operative day to assess postoperative complications including pain, swelling, pus discharge, trismus and dry socket.

Evaluation of pain was done using a chart provided to the patient. The Charts were for the patient's self-assessment of pain after 8 hours, 24 hours, 48 and 72 hours. The charts were meticulously prepared to make them as easy as possible for a layman to rate the intensity of pain. The patients were grouped into two major categories:

Group 1(Study group): patients not receiving antibiotics.

Group 2 (control group): patients receiving antibiotics.

Study Group: Only Diclofenac potassium 50 mg was given after 30 minutes of extraction and continued for 3 days with regular dosage.

Control group: Amoxicillin 500 mg tds for 5 days along with Diclofenac potassium 50 mg for 3 days starting 30 minutes after the extraction.

Randomization was achieved by placing patients with odd Registration numbers in study group and even registration numbers in control group.

Results Out of the initial sample of 200 patients, 160 patients reported back for follow-up appointment. 95 (59.4%) were males and 65 (40.6%) were females. Study group comprised 80 patients (50 males and 30 females) and control group had 80 patients (45 males and 35 females). Out of the total sample, 89 were maxillary teeth and 71 mandibular teeth.

In the study group, 16 patients reported back, 8 with mild pain, 6 with moderate pain and 2 with severe pain. 7 had signs of dry socket.

In the control group, 11 patients reported with complications, 8 had mild pain, 4 had.

Moderate pain and 1 had severe pain. 9 had clinical signs of dry socket.

Post-operative trismus was seen in 5 cases of study & 3 cases of controlled group.

PATIENT GROUP	STUDY GROUP		CONTROL GROUP	
TOTAL PATIENTS	80		80	
SEX	MALE	FEMALE	MALE	FEMALE
	50	30	45	35
DRY SOCKET	3	4	3	6
MILD PAIN	5	5	4	4
MODERATE PAIN	4	2	2	2
SEVERE PAIN	0	2	0	1
POST OP SWELLING	0	2	2	1
POST OP TRISMUS	2	3	1	2

Discussion

There are various schools of thoughts regarding the prescriptions of antibiotics after extraction. Some literature advocated the use of post extraction antibiotics arguing that oral cavity is full of micro organisms that become pathognomic when there is distruption of soft tissue envelop after extraction within socket (Martin et al; SHEA APIC, CDS,1992 ; pallasch & slots,1991; [8-10] while others reported that antibiotics do not really permeate into the extraction socket due to thrombosis of microvascuature AL-Rousan et al ,[11].However only 12 % cases reported with post extraction minor complications in both groups comparable with the previous studies[12] Many authors do not support the indiscriminate use of antibiotics [13,14]

The incidence of complication between two groups noticed was very low in the present study as also supported by Hochwald et al., 1983 [14]

.Females were more affected than males in accordance to the literature (Akinbami and Thikan, 2014 [15]

Complications like pain swelling bleeding, bruising nerve injuries, trismus, and dry socket are most common after extraction of teeth [16].Dry socket typically causes a sharp excruciating pain after 2-5 days after extraction which is referred to head & neck .It is painful inflammation within empty socket due to disrupted clot ,inflamed alveolar bone, unprotected & exposed socket become packed with food & debris[17] . This condition is not an infection use of antibiotics has no effect on role in its treatment

.chlorhexidine mouth washes & gel provides a benefit in treatment of dry socket [18].There was no statistical difference between in swelling & trismus in two groups in the present study, in accordance with studies reported by Goldberg et al (1958),[19] Curran et al (1974)[20].Pain was found less in controlled group (group taking antibiotics) & gradually decreased after 2nd day whereas in group without antibiotics patient complained of pain till 4-5 days in contrast with the studies of Agarwal et al [21] who reported no significant difference in pain between use of antibiotics & post extraction pain[22]

In the present study controlled group suffered adverse effects of antibiotics like epigastric pain,vomiting,diarrhea, etc . Also development of resistance due to overuse & unfavourable drug reactions. Although side effects were mild but still unnecessary use of antibiotics without any benefit remains questionable.

Conclusion

As per present study the routine antibiotics usage was not necessary following simple exodontias. Atraumatic extractions, Aseptic extraction techniques, compliance of post extraction instructions like mentainence of good oral hygiene, avoidance of smoking, and good systemic health prevent post extraction complications & help in uneventful healing without use of antibiotics

Conflict of interest

The authors hereby declare that there is no conflict of interest

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