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Original Article

Assessment of need of prescribing antibiotics following simple exodontia: a comparative study

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***ABSTRACT*:**
Background: Dentists prescribe 10% of all antibiotics in the community, ranking fourth after family practitioners, paediatricians, and internists. Hence; we planned the present study to assess the need for postoperative antibiotics in patients undergoing simple exodontia. **Materials & methods:** The present study it included evaluation of need for postoperative antibiotics in patients undergoing simple exodontia. A total of 100 patients planned to undergo dental extraction were included in the present study. All the patients were broadly divided into two study groups; group A included patients which were prescribed with postoperative antibiotic, while group B included patients which were not prescribed with postoperative antibiotics. Regular follow-up of all the patients was done for assessing the postoperative complications. Numeric scale was used for evaluation of postoperative pain. The patients of group A were prescribed with amoxicillin with clavulanic acid 625 mg 12 hourly for 5 days. All the results were analyzed by SPSS software. **Results:** Frequency of occurrence of dry socket among subjects of group A and group B were 6 percent and 10 percent respectively. However; we didn't observe any significant difference while comparing the prevalence of dry socket in between subjects of two study groups (P- value > 0.05). **Conclusion:** In patients undergoing simple dental extractions, clinician might avoid prescribing antibiotics.
Key words: Antibiotic, Exodontia, Extraction

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INTRODUCTION

Antibiotic resistance, driven by antibiotic prescribing, is one of the most serious health threats facing the world today, and approximately 30% of antibiotics prescribed in primary care settings are considered unnecessary. Dentists prescribe 10% of all antibiotics in the community, ranking fourth after family practitioners, pediatricians, and internists.[1- 3]

The major use of antibiotic prophylaxis for dental procedures, are cases which cause bleeding in the oral cavity, has become a common practice among dentists. Antibiotics are indicated in dental practice for treating immunocompromised patients, evident signs of systemic infection and if the signs and symptoms of infection progress rapidly.[4- 6] Hence; we planned the present study to assess the need for postoperative antibiotics in patients undergoing simple exodontia.

MATERIALS & METHODS

The present study was planned in the department of oral surgery of the dental institute and it included evaluation of need for postoperative antibiotics in patients undergoing simple exodontia. A total of 100 patients planned to undergo dental extraction were included in the present study. All the patients were broadly divided into two study groups; group A included patients which were prescribed with postoperative antibiotic, while group B included patients which were not prescribed with postoperative antibiotics. The entire research protocol was described in detail to all the patients. Exclusion criteria for the present study included:

- Patients with history of any other systemic illness,
- Patients with any known drug allergy,
- Patients with any metabolic disorder,
- Patients with third molar extractions.

Senior dental surgeons performed all the dental extractions under local anaesthesia. Mucoperiosteal elevator, straight elevator (when required), and forceps were used for performing the extractions. To each and every patient, postoperative instructions were given. Regular follow-up of all the patients was done for

assessing the postoperative complications. Numeric scale was used for evaluation of postoperative pain. The patients of group A were prescribed with amoxicillin with clavulanic acid 625 mg 12 hourly for 5 days. All the results were analyzed by SPSS software. Student t test were used for assessment of level of significance. P-value of less than 0.05 was taken as significant.

RESULTS

A total of 100 patients planned to undergo dental extractions were included in the present study and were broadly divided into two study groups- group A included 50 patients which were prescribed antibiotics and group B included patients which were not prescribed antibiotic post operatively. Mean age of the subjects of group A and group B was 39.5 years and 42.5 years respectively. Frequency of occurrence of dry socket among subjects of group A and group B were 6 percent and 10 percent respectively. However; we didn't observe any significant difference while comparing the prevalence of dry socket in between subjects of two study groups (P- value > 0.05).

Table 1: Demographic details of the patients of the two study groups

Parameter	Group A	Group B
Mean age (years)	39.5	42.5
Males	30	32
Females	20	18

Table 2: Distribution of prevalence of dry socket

Parameter	Group A		Group B		P-value
	Males	Females	Males	Females	
Dry socket (n)	2	1	3	2	0.87

DISCUSSION

The risk of infection after extracting wisdom teeth from healthy young people is about 10%; however, it may be up to 25% in patients who are already sick or have low immunity. Infectious complications include swelling, pain, pus drainage, fever, and also dry socket (this is where the tooth socket is not filled by a blood clot, and there is severe pain and bad odour). Treatment of these infections is generally simple and involves patients receiving antibiotics and drainage of infection from the wound.[7- 9] Frequency of occurrence of dry socket among subjects of group A and group B were 6 percent and 10 percent respectively. However; we didn't observe any significant difference while comparing the prevalence of dry socket in between subjects of two study groups (P-value > 0.05). Lodi G et al determined the effect of antibiotic prophylaxis on the development of infectious complications following tooth extractions. Their review included 18 double-blind placebo-controlled trials with a total of 2456 participants. Five trials were assessed at unclear risk of bias, thirteen at high risk, and none at low risk of bias. Compared to placebo, antibiotics probably reduce the risk of infection in patients undergoing third molar extraction(s) by approximately 70% (RR 0.29 (95% CI 0.16 to 0.50) P < 0.0001, 1523 participants, moderate quality evidence) which means that 12 people (range 10-17) need to be treated with antibiotics to prevent one infection following extraction of impacted wisdom teeth. There is evidence that antibiotics may reduce the risk of dry socket by 38% (RR 0.62 (95% CI 0.41 to 0.95) P = 0.03, 1429 participants, moderate quality evidence) which means that 38 people (range 24-250) need to take antibiotics to prevent one case of dry socket following extraction of impacted wisdom teeth. There is also some evidence that patients who have prophylactic antibiotics may have less pain (MD -8.17 (95% CI -11.90 to -4.45) P < 0.0001, 372 participants, moderate quality evidence) overall 7 days after the extraction compared to those receiving placebo, which may be a direct result of the lower risk of infection. There is no evidence of a difference between antibiotics and placebo in the outcomes of fever (RR 0.34, 95% CI 0.06 to 1.99), swelling (RR 0.92, 95% CI 0.65 to 1.30) or trismus (RR 0.84, 95% CI 0.42 to 1.71) 7 days after tooth extraction.Antibiotics are associated with an increase in generally mild and transient adverse effects compared to placebo (RR 1.98 (95% CI 1.10 to 3.59) P = 0.02) which means that for every 21 people (range 8-200) who receive antibiotics, an adverse effect is likely. Although general dentists perform dental extractions because of severe dental caries or periodontal infection, there were no trials identified which evaluated the role of antibiotic prophylaxis in this group of patients in this setting.[10]

Sidana S et al evaluated the role of antibiotics in the perioperative period of dental extractions in healthy patients. In group A, patients were prescribed only anti-inflammatory drugs in the postoperative period. In group B, patients were prescribed antibiotics for 3 days and concomitant anti-inflammatory drugs in the postoperative period only. In group C, patients were prescribed a single dose of antibiotic 1 hour before the extraction procedure with no postoperative antibiotics, and only anti-inflammatory drugs were prescribed in the postoperative period. In group D, patients were prescribed mouthwash starting 15 minutes before the procedure and continuing twice daily for a period of 7 days along with anti-inflammatory drugs in the postoperative period. Patients were asked to follow up on the seventh postoperative day for suture removal and were evaluated for pain, swelling, dry socket, and local signs of infection. No significant differences were seen among the groups with respect to pain, swelling, or postextraction complications. Prophylactic antibiotics are not required during routine dental extractions in healthy patients. The use of antibiotic therapy without appropriate indications can result in the development of resistant organisms. However, a clear trend is seen in which practitioners overprescribe antibiotics as well as medications in general.[11]

CONCLUSION

Under the light of above mentioned data, we conclude that in patients undergoing simple dental extractions,

clinician might avoid prescribing antibiotics. However; future studies are recommended.

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