

# Salt water mouthwash post extraction reduced post operative complications

## Abstracted from

**Osunde OD, Adebola RA, Adeoye JB, Bassey GO.**

Comparative study of the effect of warm saline mouth rinse on complications after dental extractions.

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Address for correspondence: Otasowie D. Osunde, Department of Oral and Maxillofacial Surgery, University of Calabar Teaching Hospital, Calabar, Nigeria. E-mail: otdany@yahoo.co.uk

## Question: Does the use of saline mouthrinse following dental extractions reduce post-operative complications?

**Design** Randomised controlled trial

**Intervention** Patients aged  $\geq 16$  years requiring non-surgical extraction were randomised into three groups. Group A (n = 40) were instructed to gargle six times daily with warm saline and group B (n = 40) twice daily; group C (n = 40) were not instructed to gargle with warm saline and served as controls. All patients received the same oral antibiotics and analgesics, and similar postoperative instructions, except regarding saline rinses. Mouth rinsing was to start 24 hours after the procedure and patients were reviewed at 72 hours.

**Outcome measure** The patients were evaluated 72 h post-operatively for the presence of alveolar osteitis, acute inflamed socket and acute infected socket by an independent observer who was blinded to the treatment group.

**Results** One hundred and twenty patients were randomised (40 per group). The overall prevalence of alveolar osteitis was 10.0% and that of acute inflamed socket was 25.0%. No cases of acute infected socket were observed.

There was a statistically significant difference between the study groups with respect to the development of alveolar osteitis ( $\chi^2 = 15.43$ ,  $df = 2$ ,  $P = 0.001$ ), but not for acute inflamed socket, with only 2.5% of the saline groups (2 out of 80) developing alveolar osteitis compared with 25% (10 of 40) in the control group.

**Conclusions** The instruction to use warm saline mouth rinse is beneficial in the prevention of alveolar osteitis after dental extractions. There is no significant difference in the efficacy of the twice-daily warm saline mouth rinse regimen compared to the six times daily regimen. The twice-daily saline mouth rinse regimen is more convenient, and patient compliance may be better than with the six times daily rinse routine.

## Commentary

Extractions are common and the recommendation of the use of a salt water mouthwash postoperatively following extractions is custom and practice in dental surgeries around the world. However, the evidence base for this practice seems to be non-existent, although many studies have looked at the efficacy of various medicaments in the reduction and management of post-operative complications.<sup>1</sup> This study is the first that we are aware of to focus on the actual effectiveness of saline mouthwashes. It looked at whether use of warm, saline mouthwash reduced the incidence of three post-operative complications (acute inflamed socket, alveolar osteitis and acute infected socket) following an uncomplicated extraction and additionally investigated the effect of different frequencies of mouth rinsing.

The results indicate that the use of a warm saline mouthwash at least twice daily significantly reduces the incidence of alveolar osteitis (persistent throbbing pain and exposure of bare alveolar bone usually presenting within 48–72 hours) whilst having no effect on levels of acute inflamed socket or acute infected socket.

This was a well conducted study and the groups were broadly similar at the outset, both in terms of patient demographics and reasons for extraction. It would have been useful to have had more detail on the randomisation and allocation processes used, however, the blinding of the postoperative reviewers increases confidence in the researchers' efforts to reduce bias in the study. The results show a significant difference between those who used salty mouthwash and those who did not, for development of alveolar osteitis. It did not show a difference in the groups with different frequencies of the use of warm salty water. Clinically, this is potentially a beneficial finding; a simple intervention that can be carried out by patients at home, with low risks and costs, which results in reduction of discomfort for patients.

Despite the encouraging results from this study, the main problem is a lack of generalisability. All participants within the study received oral antibiotics (amoxicillin 500 mg and metronidazole 200 mg, 8 hourly for five days). This does not reflect contemporary/best practice in a group of healthy individuals,<sup>2</sup> is not standard practice in the UK and could have had an impact on postoperative infections. Exclusion criteria were extensive and diverse with groups generally considered to be high risk for postoperative infections; uncontrolled diabetes, sickle cell disease, smokers, the immunosuppressed and those on the oral contraceptive pill or steroid medication, being excluded. The age range of participants was 17–45 years (mean 29 years). This relatively young group may display different healing responses from older patients.

The authors explain that a reason for having a twice daily and six times daily mouthwash was because many patients will struggle with adherence to a six times daily routine, however there is no mention of how strictly the participants adhered to the protocol.

Although the authors did not publish the risk reduction for their intervention we think this information is useful for the reader to inform their practice. With regards to acute alveolar osteitis, the Absolute Risk Reduction from this study was 22.5%. This gives a Numbers Needed to Treat value of five (95% CI, 3 to 12), meaning that five patients need to rinse with salty mouthwashes twice per day to avoid one episode of alveolar osteitis, although the actual value is likely to lie between three to 12 patients (with 95% certainty).

These results will certainly be of interest to dentists, however, given that some of the groups excluded have the highest disease burden for postoperative infections it may have been pragmatic to include them. Further study to examine the efficacy of the mouth rinse without any underlying antibiotic effect is likely indicat-

ed. Given the very low risk associated with the use of warm salty mouthwashes, this study supports the continued recommendation of its regular use by patients. It does however highlight the need for further, more generalisable research in this area.

**Matthew Stewart<sup>a</sup>, Emily Levey<sup>b</sup> and Namita Nayyer<sup>c</sup>**

*a Dental Health Services Research Unit, School of Dentistry, University of Dundee,*

*b Department of Special Care Dentistry and*

*c Department of Oral Surgery, Dundee Dental Hospital, Dundee, Scotland, UK*

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