

Preoperative clindamycin prophylaxis does not prevent postoperative infections in endodontic surgery

What are the effects of clindamycin prophylaxis in the prevention of postoperative wound infections in patients undergoing endodontic surgery?

Lindeboom JA, Frenken JW, Valkenburg P, van den Akker HP. *The role of preoperative prophylactic antibiotic administration in periapical endodontic surgery: a randomized, prospective double-blind placebo-controlled study. Int Endod J 2005; 38:877–881*

Design A double-blind placebo-controlled randomised controlled trial (RCT) was conducted at a university department of oral and maxillofacial surgery in The Netherlands.

Intervention Participants in the RCT were those referred for endodontic surgical procedures. They received at random either a single dose of 600 mg clindamycin or placebo orally 1 h before incision. Verbal and written postoperative instructions were given. A systemic oral nonsteroidal anti-inflammatory drug (ibuprofen 600 mg three times a day for 5 days) was also prescribed and patients were instructed to rinse with a 0.2% chlorhexidine solution twice a day for 1 week. Sutures were removed after 1 week.

Outcome measure The postoperative assessment was carried out according to clinical parameters of infection at 1, 2 and 4 weeks after surgery. The primary outcome measure was infection at the surgical site. All undesirable reactions occurring as a result of the antibiotic prophylaxis were noted, such as skin rashes or gastrointestinal disorders.

Results Over a period of 28 months, 256 patients were entered into the study. The mean age of the study population was 44.4 years [standard deviation (SD), 11.4] with a sex distribution of 147 females (47.4%) and 109 males (42.6%). One half of the patients took clindamycin and one half took placebo. In the clindamycin group, the mean duration of surgery was 32.3 min (SD, 8.8) and in the placebo group the mean duration was 32.5 min (SD, 8.4) (P 0.89). Two infections [1.6%; 95% confidence interval (CI), 0.5–4.7] were identified in the clindamycin group and four [3.2%; 95% CI, 0.4–1.3] in the placebo group (P 0.44). Infections occurred within the first postoperative week in two cases whereas the remaining four cases were seen at the end of the second postoperative week. No adverse effects of clindamycin or the placebo were reported.

Conclusions No statistically significant difference was found between clindamycin prophylaxis and placebo with regard to the prevention of postoperative infection in endodontic surgical procedures.

Commentary

At first glance, this article does not appear to add significantly to current knowledge. The authors declare, however, that it is the only prospective double-blind RCT dealing with antibiotic prophylaxis for endodontic surgery. As such, it is a very welcome addition to the evidence-based library.

Two hundred and fifty-six individuals who had periapical periodontitis on a variety of teeth underwent standardised periapical surgery. The patients were randomly assigned to 600 mg of clindamycin or placebo 1 h pre-operatively. When the infectious morbidity was assessed at 1, 2 and 4 weeks post-operatively, it was found that two infections (1.6%) had occurred in the clindamycin group and four (3.2%) in the placebo group. This was not statistically significantly different, leading the authors to the conclusion that, in comparison with placebo, prophylactic clindamycin does not reduce the rate of post-operative infection after periradicular surgery.

Teeth with apical periodontitis were specified in the inclusion criteria: people who had acute symptoms of endodontic inflammation were excluded from the study. This suggests that only asymptomatic teeth were treated surgically, which may contrast with the clinical treatment planning of some surgeons. Careful analysis of the article reveals the study to be otherwise well-conducted. It has a clearly defined conclusion that can easily be applied to clinical practice. A similar study design could be utilised to research the effects of other commonly used antibiotics.

The use of pre-operative prophylactic antibiotics is contentious and this is illustrated perfectly in the introduction to this article. It states that, in 2002, a survey of the American Association of Endodontists revealed that 37% of endodontists routinely prescribed antibiotics for endodontic surgery. This is despite two review articles in 1991¹ and 2000² stating that there was no evidence to support antibiotic prophylaxis for surgical endodontics. The discrepancy between clinical decision making and the growing body of evidence is a mystery.

Gillian Ainsworth

Department of Oral Surgery, Glasgow Dental Hospital and School NHS Trust, Glasgow, Scotland, UK

1. Longman LP, Martin MV. The use of antibiotics in the prevention of post-operative infection: a re-appraisal. *Br Dent J* 1991; 170:257–262.
2. Longman LP, Preston AJ, Martin MV, Wilson NH. Endodontics in the adult patient: the role of antibiotics. *J Dent* 2000; 28:539–548.

Evidence-Based Dentistry (2006) 7, 72.

doi:10.1038/sj.ebd.6400428

Address for correspondence: JAH Lindeboom, Department of Oral and Maxillofacial Surgery, Academic Medical Centre, Amsterdam and Academic Centre for Dentistry Amsterdam (ACTA), University of Amsterdam, Meibergdreef 9, 1105 AZ Amsterdam, The Netherlands. E-mail: j.a.lindeboom@amc.uva.nl