

Scientific release
from the European
Federation of
Periodontology

Rapporteurs: Delatola C, de Jong
TMH, Faber C, Sygkounas E with
Loos BG and van der Velden U.

Affiliation: Prepared by the residents
from the Postgraduate Program of
Periodontology and Implant Dentistry
at the Department of Periodontology,
ACTA, Amsterdam, The Netherlands.

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Study:



A randomised controlled trial on immediate surgery versus root planing in patients with advanced periodontal disease: a cost-effectiveness analysis

Miremadi SR, De Bruyn H, Steyaert H, Princen K, Sabzevar MM, Cosyn J. *J Clin Periodontol.* 2014; 41; 164-171.

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Relevant background to study:

The conditions of tissues for periodontal surgery may be more favourable when marginal inflammation has subsided after an initial round of non-surgical debridement. However, surgical treatment

is frequently needed in patients with advanced periodontal disease and therefore surgery without non-surgical pre-treatment could be considered valuable in some patients.

Study Aims:

1: to compare the clinical outcome and the cost-effectiveness of immediate surgery to traditional scaling and root planing (SRP) in patients with advanced periodontitis, with a focus on residual

lesions or poorly responding sites.
2: to evaluate the clinical outcome of the adjunctive systemic use of azithromycin to non-surgical re-treatment of residual pockets.

Methods:

Thirty-nine patients initially received meticulous oral hygiene instructions. They were then randomly assigned to either immediate surgery (n = 19) or SRP (n = 20). Six months following treatment, patients from both groups received re-debridement of the sites with residual pockets (≥6 mm) in

combination with systemic azithromycin. Clinical measurements were performed at baseline, 6 and 12 months. Chair-time was used to determine final financial costs (surgery €200 and SRP €100 per hour). Patient discomfort and number of painkillers were also assessed.

Results:

At 6 months, only 6 patients (32%) in the surgery group had residual pockets ≥6 mm and received re-debridement with adjunctive systemic azithromycin. In the SRP group this was the case for 14 patients (70%). At 12 months the prevalence of residual pockets ≥6 mm was less than 1% for

both treatment groups. At 6 months, surgery costs were an extra € 746 compared with SRP, but € 46 of this amount could be offset as a result of a reduced need for supportive care at 12 months. There was no difference in discomfort and pain experience between groups.

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**Conclusions,
impact and
limitations:**

Conclusions:

- At 6 months, both modes of treatment led to significant improvement of the periodontal condition, however with more residual pockets in the SRP group.
- Surgery reduced the need for additional treatment of residual pockets.
- Additional treatment by re-debridement with systemic azithromycin was effective in resolving residual pockets.
- The final (12 months) % of residual pockets was very low and similar in both groups (<1%).
- € 700 could be saved on average by performing SRP instead of surgery because surgery needed 100min. more chair time.

Impact:

- There was a substantial reduced need for subsequent systemic antibiotics in the surgery group compared to the SRP group.
- Periodontal surgeries without initial SRP may be a valid and efficient treatment in specific cases.

Limitations:

- Residual pockets were defined as ≥ 6 mm; it would be interesting to include also a threshold of ≥ 5 mm.
- Information about furcation involvements and the presence of angular defects was lacking.
- It was unclear whether the periodontal surgeries were extended to all teeth regardless of pocket depth.