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study

A double-masked RCT comparing four periodontitis treatment strategies: five-year clinical results

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RELEVANT BACKGROUND

Questions regarding the relative benefits of full-mouth disinfection (FDIS) over conventional quadrant-based scaling and root-planing (qSRP), as well as the use of adjunctive antibiotics in mechanical periodontal therapy, are still considered to be hot research areas in periodontology. It is difficult to reach concrete conclusions because the available studies in the literature do not reveal clear evidence for the superiority of one modality over the other.

AIMS

The aim of this study was to evaluate the long-term clinical results of two different mechanical treatment approaches, with and without the adjunctive use of metronidazole (MTZ), for testing the hypothesis of “no difference in results in five years’ time.”

MATERIALS AND METHODS

Participants were recruited from among patients referred by local dentists to a specialist periodontal clinic. The preselected 294 periodontitis patients with advanced periodontal destruction were re-evaluated for eligibility after a pre-study hygiene phase in which they were given instructions in order to obtain excellent oral hygiene. Following the pre-study hygiene phase and subsequent baseline clinical examination, 184 eligible patients aged between 35 and 75, were randomly assigned to one of four treatment modalities as:

1. FDIS
2. qSRP
3. FDIS+MTZ
4. qSRP+MTZ

The eligibility of the patients required five periodontal sites persisting with a pocket depth ≥ 5 mm, high level of oral hygiene (<15% sites with plaque), and microbial confirmation for high sensitivity to MTZ.

results

- A total of 161 of the 184 participants completed the study period of five years. All groups showed improvement in oral hygiene, a decrease in bleeding on probing, and gains in clinical attachment level, and these results were sustained over the five-year period in all groups.
- The effects of adjunctive MTZ or FDIS were found negligible and clinically insignificant after five years compared with the general effects of conventional mechanical treatment performed as qSRP over several weeks, when the patients maintained a high standard of oral hygiene.
- However, it was pointed out that the influence of MTZ was statistically significant at sites with pocket depth ≥ 7 mm, granting a minimal effect in pocket-depth reduction of 0.18mm, whereas FDIS contributed a statistically significant additional effect of 0.24mm for maxillary molars and 0.28mm for premolars.



LIMITATIONS

- Although a very high number of patients were followed for a long period of time, the design of the study using a three-month oral-hygiene phase before the actual intervention phase and subsequent treatment does not corroborate with everyday clinical practice, making it difficult to extract generalised conclusions.



CONCLUSIONS

- It was concluded that MTZ should not be considered as part of a regular treatment strategy for generalised chronic periodontitis, and FDIS is no better than conventional qSRP performed over several weeks when the long-term results of periodontal therapy were considered.



IMPACT

- Performing a high level of oral hygiene is the basic requirement and of critical importance for the maintenance of conditions of periodontal health.
- Considering the side effects and environmental consequences, the use of adjunctive MTZ should be carefully evaluated before being included in a regular treatment strategy.



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