Schlussfolgerung:
AM zeigte eine bessere klinische Wirksamkeit und Langzeitstabilität als CHX. Aufgrund hoher Standardabweichungen spiegelte die SF-Konzentration von Calprotectin die klinischen Unterschiede nicht wider.

9. Abstract

Keywords:
generalized aggressive periodontitis, scaling/root planing, amoxicillin/metronidazole, chlorhexidine, controlled-delivery-device (PerioChip), calprotectin.

Background:
Adjunctive systemic administration of amoxicillin/metronidazole (AM) in generalized aggressive periodontitis (gAP) therapy results in good clinical and microbiological outcome and periodontal long-term stability. However, the use of antibiotics should be limited due to possible side effects and increasing bacterial resistances. Chlorhexidin within a controlled-delivery-device (PC) improves the outcome of scaling/root planing (SRP), when adjunctively used in chronic periodontitis therapy. Its effect in the treatment of gAP has not been evaluated.

Aims of the study:
The effect of adjunctive use of PC in the treatment of gAP was investigated. Efficacy of PC was compared to the standard treatment with AM. Besides assessment of clinical parameters, the concentration of the inflammation marker calprotectin in gingival crevicular fluid (GCF) was investigated.

Material/methods:
In this randomized, single-blinded controlled clinical study, 36 Patients (18/group, 35±4 years) with untreated gAP were treated by SRP and assigned to either systemic AM or local application of PC. Clinical parameters PPD, CAL, BoP and Pus were recorded at baseline, 3 and 6 months after therapy. GCF was sampled at deep and shallow reference sites and the concentration of calprotectin was measured by ELISA.

Results:
At month 3, initial mean PPD/patient was decreased from 4.1±0.8mm to 2.4±0.4mm for AM and from 3.8±0.8mm to 2.5±0.4mm for PC. Mean CAL/patient changed from 4.9±1.2mm to 4.0±1.2mm for AM and from 4.6±1.1mm to 4.0±1.0mm for PC. Changes within groups were significant ($p<0.001$), while no differences between groups could be found. At month 6, for AM no significant change could be observed with PPD 2.3±0.4mm and CAL 4.0±1.1mm. For PC, PPD worsened significantly to 2.6±0.5mm ($p=0.013$) between months 3 and 6. After 6 months, AM showed significant ($p<0.006$) more PPD reduction and CAL gain (1.8±0.6mm/0.9±0.4mm) compared to PC (1.2±0.5mm/0.5±0.4mm). At months 3 and 6, Pus was detected in the PC-group only ($p\leq0.018$). Multirooted teeth in the PC-group showed distinct deterioration between months 3 and 6 ($p<0.001$). Deep reference sites presented the largest differences between groups, as AM showed significant ($p<0.001$) more PPD-reduction and CAL-gain after 6 months (4.21±1.33mm/2.83±1.30mm) than PC (3.11±1.29/1.65±1.23mm). Calprotectin concentration decreased significantly in both groups ($p\leq0.012$), but no difference between treatment groups could be found ($p>0.05$).

Conclusion:
AM showed higher efficacy in terms of clinical treatment outcome and long-term stability than PC. Due to high standard deviations, GCF-concentrations of calprotectin failed to reflect clinical differences.