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Photodynamic therapy in aggressive periodontitis

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Objectives

Preclinical and clinical data suggest that the additional application of photodynamic therapy (PDT) to nonsurgical periodontal therapy may positively influence the clinical outcomes in chronic periodontitis patients. However, there are very limited data on the effects of PDT when used in conjunction with nonsurgical periodontal therapy in patients with aggressive periodontitis.

Therefore, the aim of this case series was to evaluate clinically the effects of PDT as an adjunct to nonsurgical periodontal treatment in aggressive periodontitis patients.

Materials and methods

Fifteen patients diagnosed with aggressive periodontitis were treated with scaling and root planing followed by a single episode of PDT. Probing pocked depth (PPD), gingival recession (GR), and clinical attachment level (CAL) as well as bleeding on probing (BOP) were measured at baseline, 3 and 6 months after therapy. Only sites with initial PDD ≥ 4 mm were treated and included in the statistical analysis.

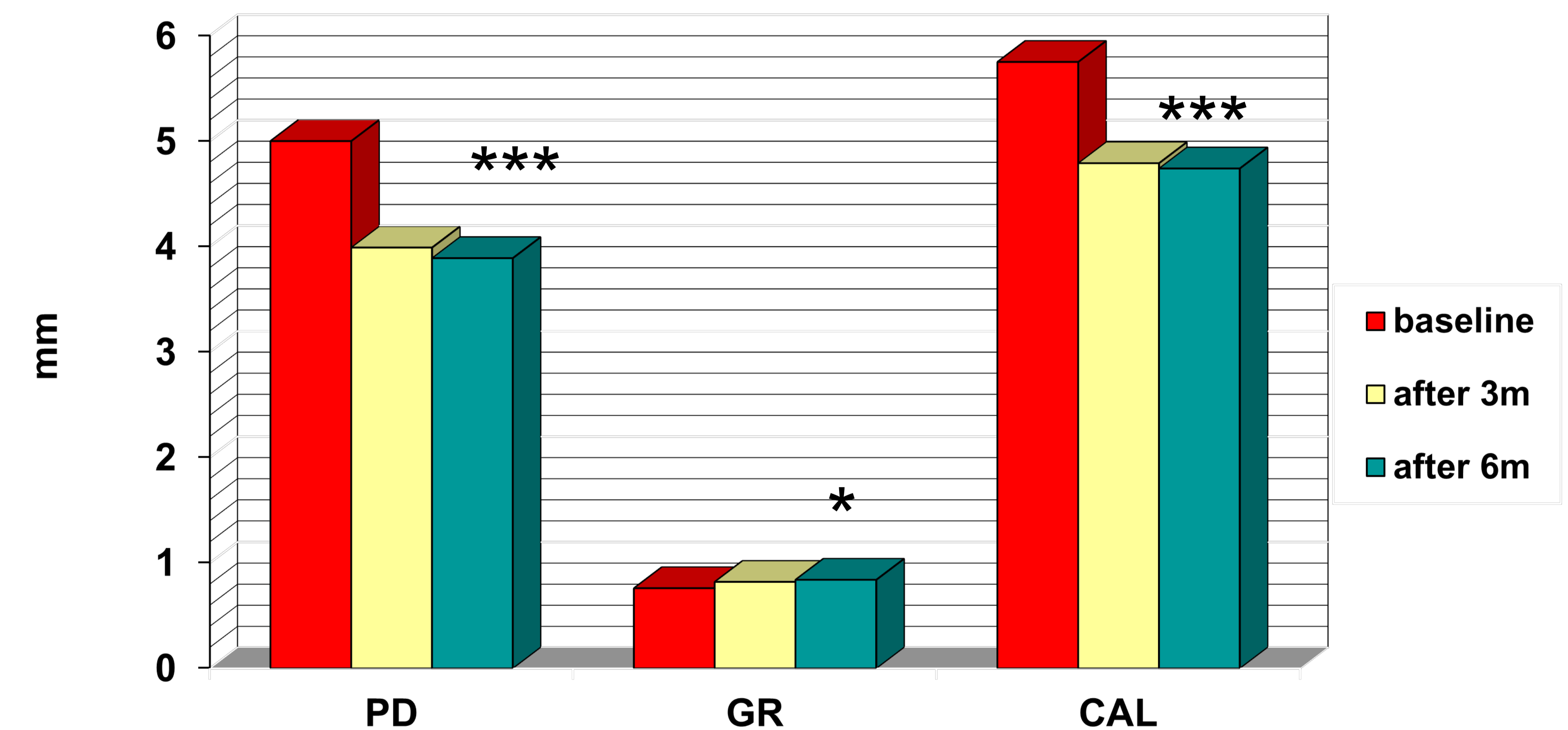
Results

A total of 731 sites were monitored at the different time points while the statistical unit was the subject. Mean PPD was reduced significantly from 5.00 ± 0.48 mm to 3.99 ± 0.87 mm after 3, and to 3.89 ± 0.866 mm after 6 months ($p < 0.001$), respectively. Mean CAL changed from 5.75 ± 1.44 mm at baseline to 4.79 ± 1.37 mm after 3 and 4.74 ± 1.41 mm after 6 months, respectively ($p < 0.001$). GR increased significantly from 0.76 ± 0.9 at baseline to 0.82 ± 0.97 (3 month; $p=0.013$) and 0.84 ± 0.98 (6 months; $p = 0.008$). BOP was significantly reduced from 70.73 ± 33.01 % to 37.00 ± 19.45 % ($p < 0.001$) and 44.07 ± 23.04 % ($p = 0.002$) after 3 and 6 months, respectively. There were no statistically significant differences in any of the evaluated parameters between 3 and 6 months.

Results



Figures: A subject treated with scaling and root planing (A), treated with a single episode of PDT (B) and 6 months post treatment (C).



Graph: Mean PD, GR and CAL at baseline, 3 and 6 months after therapy.

Conclusion

In patients with aggressive periodontitis nonsurgical periodontal therapy followed by a single application of PDT resulted in significant PPD, CAL and BOP improvements at 3 and 6 months following therapy.