

INTRODUCTION

Enamel matrix derivative (EMD) showed higher clinical outcome of periodontal surgical treatment of intrabony defects. It has been hypothesized that EMD contributes to the early resolution of inflammation in periodontal lesions.

OBJECTIVE

To evaluate the systemic effect of periodontal surgery with and without the adjunct of EMD in sites with intrabony defects of ≥ 4 mm in vertical depth.

PRIMARY OUTCOME

The change of high-sensitive C Reactive Protein (CRP) 24 hours after the surgery.

METHODS

- ✓ RCT, double blind, 6 months follow-up
- ✓ ClinicalTrials.gov: NCT03590093
- ✓ Sample size calculation \rightarrow 3.5 mg/l difference in CRP between groups; 90% power, $\alpha = 0.05$, SD= 3 + 10% drop-out rate: for a total of 19 patients per group

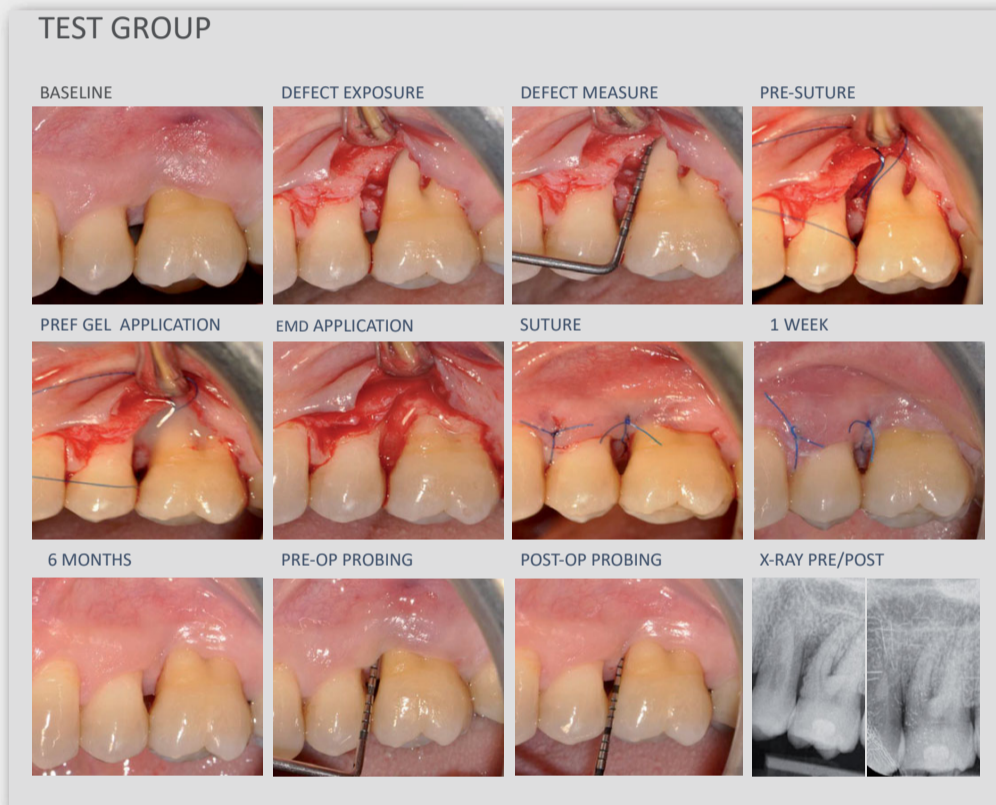
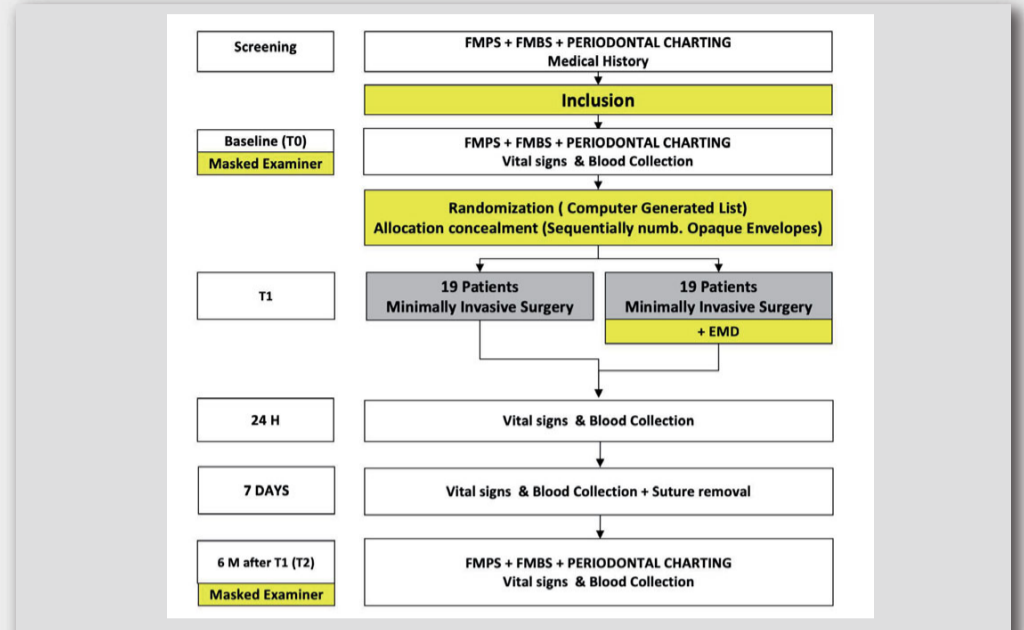
Inclusion criteria

- ✓ Intrabony defects ≥ 4 mm deep
- ✓ No previous periodontal surgical treatment
- ✓ Systemically healthy

Systemic parameters: CRP, lipid profile, fibrinogen, D-dimer, cystatin, glucose levels.

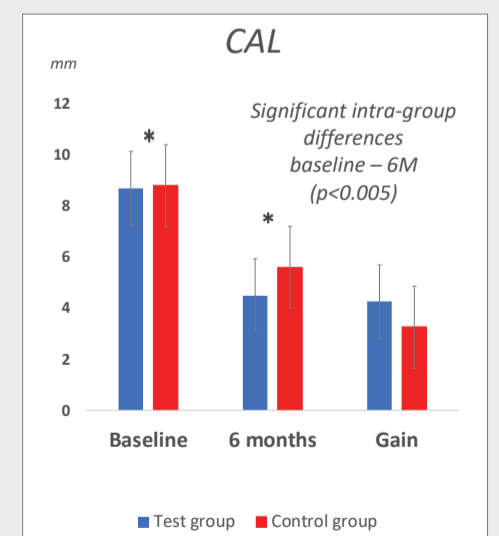
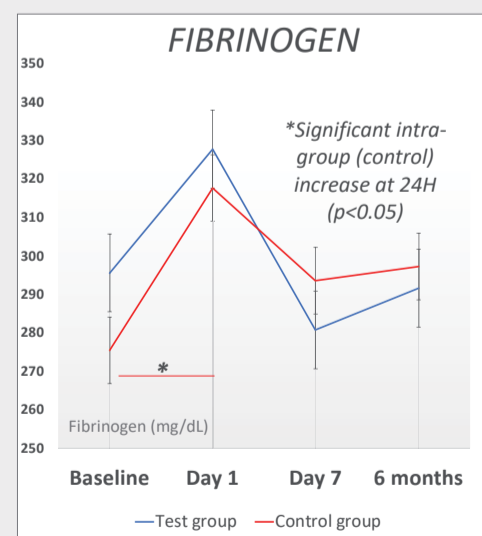
Clinical parameters: periodontal pocket depth (PPD), clinical attachment level (CAL), recession.

Study flow-chart

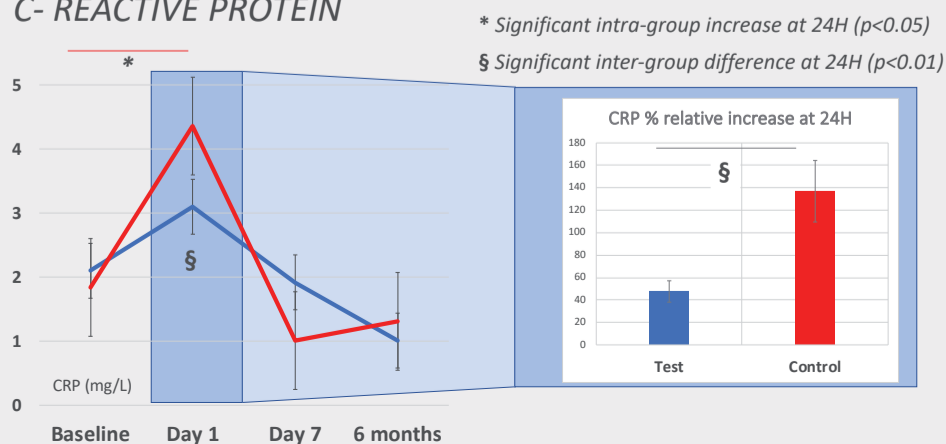


RESULTS

Variable	Test group	Control group
Mean (St. Dev.)		
Age, years	53.47 \pm 8.24	60.36 \pm 9.26*
Gender, female (%)	47	58
Smoke, current smokers (%)	2	0
BMI, Kg/m ²	24.87 \pm 3.23	24.07 \pm 2.76
Number of missing teeth	2.26 \pm 0.56	2.26 \pm 0.81
CRP (mg/L)	2.10 \pm 4.02	1.84 \pm 2.88
Fibrinogen (mg/L)	295.63 \pm 79.22	257.47 \pm 91.30
Cystatin C	0.65 \pm 0.13	0.72 \pm 0.14
D-Dimer (mg/L)	0.32 \pm 0.14	0.30 \pm 0.13
Glucose (mg/L)	78.95 \pm 11.62	85.95 \pm 12.53
Total Cholesterol	202.68 \pm 25.15	217.16 \pm 29.37
HDL	68.89 \pm 13.25	62.95 \pm 15.60
LDL	118.54 \pm 26.38	135.76 \pm 26.77
Triglycerides	85.16 \pm 26.95	92.26 \pm 30.09



C- REACTIVE PROTEIN



CONCLUSIONS

- ✓ EMD adjunction is associated with lower acute phase response, if compared to conventional surgical debridement, in the immediate post-operative period.
- ✓ Regeneration with biologically active molecules may take place through an anti-inflammatory action.
- ✓ Further studies are needed to elucidate the biological rationale behind these findings.