International Poster Journal IPJ of Dentistry and Oral Medicine

Int Poster J Dent Oral Med 2011, Vol 13 No 3, Poster 540

Treatment of intrabony defects with Ostim® or Emdogain®

Language: English

Authors:
Dr. Elyan Al-Machot, ZA. Ihssan Khalili, PD Dr. med. Barbara Noack, Prof. Dr. med. habil. Thomas Hoffmann,
Dresden University of Technology, Medical Faculty, Department of Periodontology, Dresden, Germany

Date/Event/Venue:
July 14-17, 2010
IADR General Session
Barcelona, Spain

Objectives

Comparison of the treatment outcomes after regenerative periodontal surgery using either an enamel matrix derivative (Emdogain®) or a synthetic bone graft (Ostim®) in wide intrabony defects.

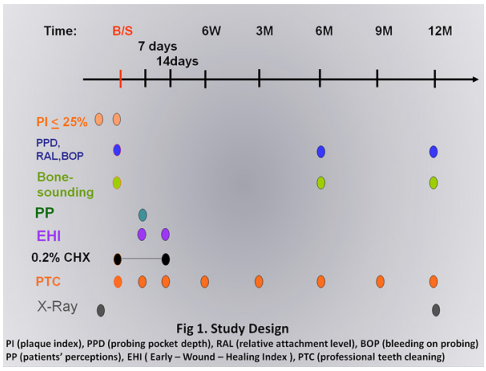


Fig. 1a: Study Design

Material and Methods

Twenty-four patients with chronic periodontitis were recruited at a German university dental clinic. All patients showed intrabony defects of at least 4mm depth and 2mm width. Using a microsurgical technique, a modified papilla preservation flap was prepared. After debridement, patients were randomly assigned to Emdogain group (control) or Ostim group (test), figure 2 (a, b). Assessments at baseline and after 6 months included bone sounding, attachment level, probing pocket depth, and bleeding on probing. Early wound healing, adverse effects and patients perceptions were also recorded, figure 1.

Fig. 2a: Treatment with EMD

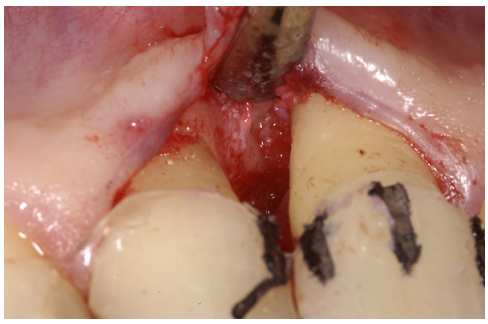
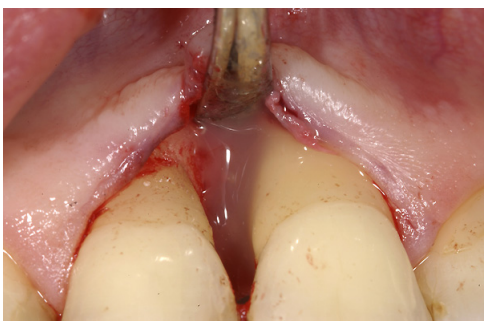


Fig. 2a: Treatment with EMD



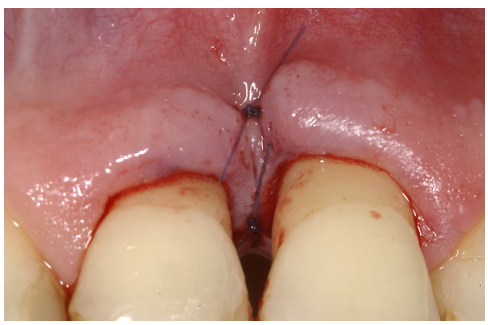


Fig. 2a: Treatment with EMD

Fig. 2a: Treatment with EMD 1 week

Fig. 2a: Treatment with EMD

Fig. 2a: Treatment with EMD 2 weeks

Fig. 2b: Treatment with Ostim

Fig. 2b: Treatment with Ostim

Fig. 2b: Treatment with Ostim

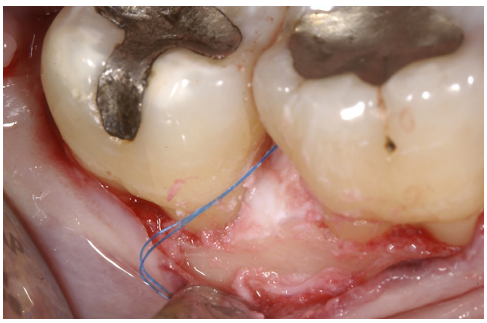


Fig. 2b: Treatment with Ostim

Fig. 2b: Treatment with Ostim

Fig. 2b: Treatment with Ostim 1 week

Fig. 2b: Treatment with Ostim 2 weeks

Fig. 2c:Defect characteristics at baseline

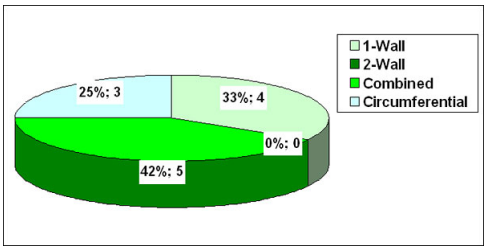
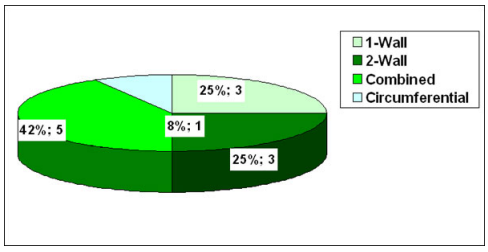


Fig. 2c:Defect characteristics at baseline



Results

Both treatment modalities led to significant clinical improvements. Change in bone fill 6 months after surgery was 1.5mm (±1.7) in the test group and 1.5mm (±1.3) in the control group, respectively. A gain in clinical attachment (RAL) of 1.7mm (±2.1) in the test group and 2.1mm (±1.8) in the control group was observed. A reduction in probing pocket depth (PPD) of 2.9mm (±1.8) in the test group and 3.2mm (±1.4) in the control group was recorded (Tables). One week after surgery, primary closure was maintained in 100% of both the test and control groups, figure 3 (a). No differences in patients' perceptions were found, figure 3 (b).

EMD Ostim

	Baseline	6 Months	Baseline	6 Months
Bone Sounding				
Mean	11.6	10.4	11.1	9.5
Standard deviation	1.6	1.4	1.8	2.3
P-value		0.002		0.009
Relative Attachment Level (CAL)				
Mean	9.5	7.5	9.2	7.5
Standard deviation	1.4	1.5	1.9	2.5
P-value		0.002		0.021
Probing Pocket Depth (PPD)				
Mean	6.3	3.0	6.4	3.5
Standard deviation	1.0	1.0	1.5	1.2
P-value		<0.001		<0.001

Tab. 1: Comparison of Clinical outcomes (mm) after 6 months

Baseline vs. 6 months	EMD Mean ± Standard deviation	Ostim Mean ± Standard deviation	P-value
PPD Reduction	3.2 ± 1.4	2.9 ± 1.8	0.50
RAL Gain	2.1 ± 1.8	1.7 ± 2.1	0.82
Bone Fill	1.5 ± 1.3	1.5 ± 1.7	0.75

Tab. 2: Comparison of Clinical outcomes (mm) after 6 months

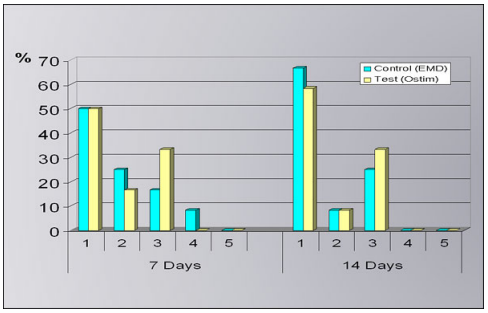


Fig. 3a: Early-Wound-Healing Index (EHI)

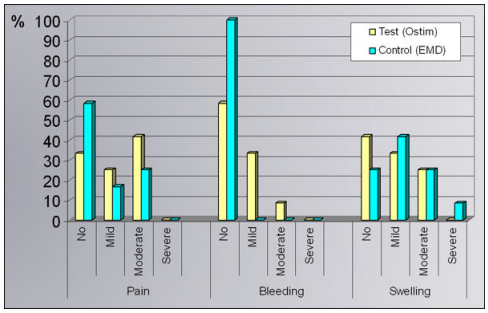


Fig. 3b: Patients' perceptions

Conclusions

In both treatment procedures (Emdogain® and Ostim®) regenerative periodontal surgery in deep intrabony defects resulted in significant clinical improvement after 6 months compared to baseline. Further investigation is needed to identify factors influencing individual responses.

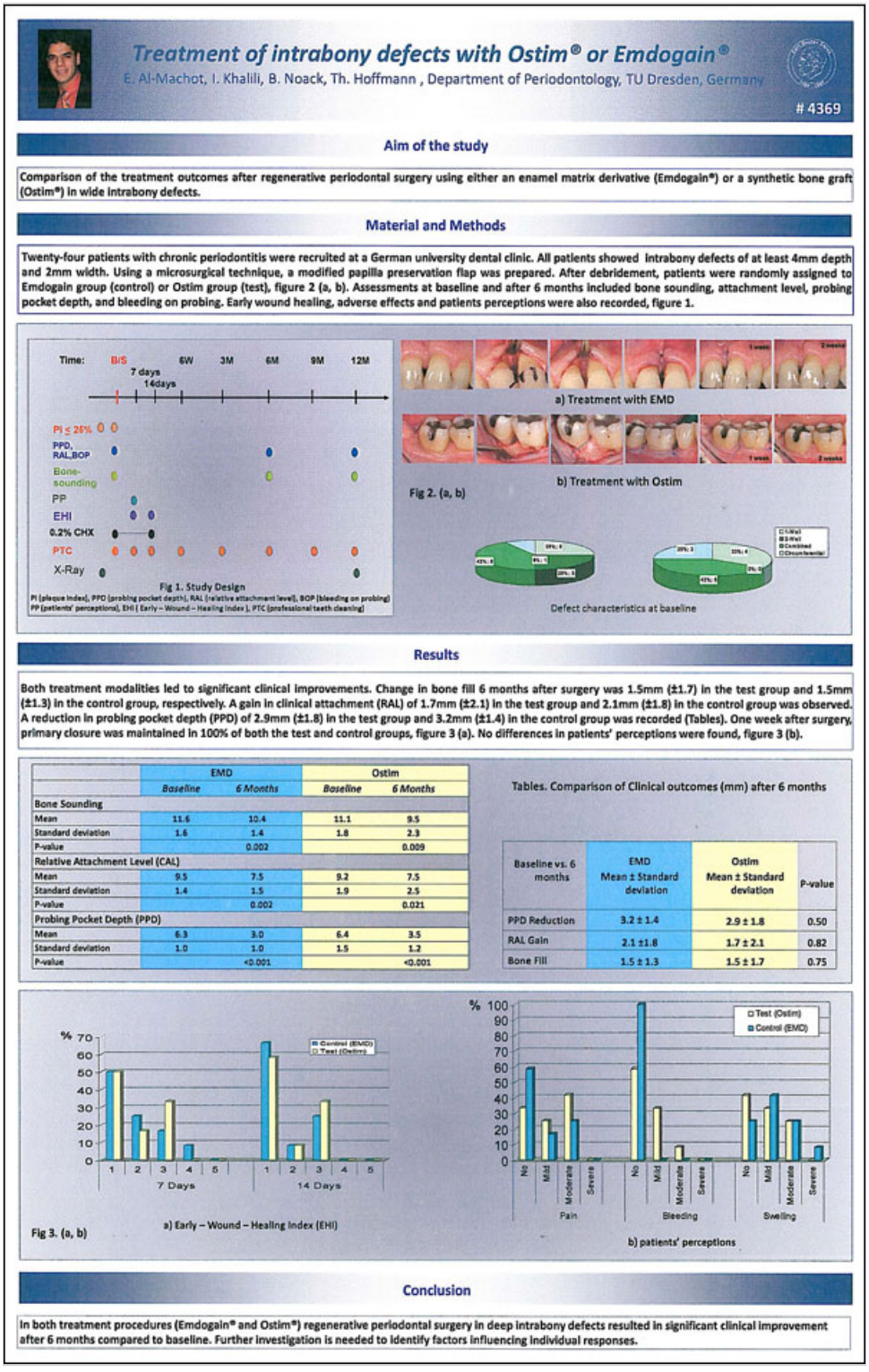
Abbreviations

PI: plaque index
PPD: probing pocket depth
RAL: relative attachment level
BOP: bleeding on probing
PP: patients' perceptions
EHI: Early-Wound-Healing Index
PTC: professional teeth cleaning

This Poster was submitted by Dr. Elyan Al-Machot.

Correspondence address:
Dr. Elyan Al-Machot
Dresden University of Technology
Medical Faculty, Department of Periodontology
Fetscherstraße 74
01307 Dresden
Germany

Poster Faksimile:



Treatment of intrabony defects with Ostim® or Emdogain®

E. Al-Machot, I. Khalili, B. Noack, Th. Hoffmann , Department of Periodontology, TU Dresden, Germany

4369

Aim of the study

Comparison of the treatment outcomes after regenerative periodontal surgery using either an enamel matrix derivative (Emdogain®) or a synthetic bone graft (Ostim®) in wide intrabony defects.

Material and Methods

Twenty-four patients with chronic periodontitis were recruited at a German university dental clinic. All patients showed intrabony defects of at least 4mm depth and 2mm width. Using a microsurgical technique, a modified papilla preservation flap was prepared. After debridement, patients were randomly assigned to Emdogain group (control) or Ostim group (test), figure 2 (a, b). Assessments at baseline and after 6 months included bone sounding, attachment level, probing pocket depth, and bleeding on probing. Early wound healing, adverse effects and patients perceptions were also recorded, figure 1.

Fig 1. Study Design

PI (plaque index), PPD (probing pocket depth), RAL (relative attachment level), BOP (bleeding on probing) PP (patients' perceptions), EHI (Early – Wound – Healing Index), PTC (professional teeth cleaning)

a) Treatment with EMD

b) Treatment with Ostim

Fig 2. (a, b)

Defect characteristics at baseline

Results

Both treatment modalities led to significant clinical improvements. Change in bone fill 6 months after surgery was 1.5mm (±1.7) in the test group and 1.5mm (±1.3) in the control group, respectively. A gain in clinical attachment (RAL) of 1.7mm (±2.1) in the test group and 2.1mm (±1.8) in the control group was observed. A reduction in probing pocket depth (PPD) of 2.9mm (±1.8) in the test group and 3.2mm (±1.4) in the control group was recorded (Tables). One week after surgery, primary closure was maintained in 100% of both the test and control groups, figure 3 (a). No differences in patients' perceptions were found, figure 3 (b).

	EMD		Ostim	
	Baseline	*6 Months*	*Baseline*	*6 Months*
Bone Sounding				
Mean	11.6	10.4	11.1	9.5
Standard deviation	1.6	1.4	1.8	2.3
P-value		0.002		0.009
Relative Attachment Level (CAL)				
Mean	9.5	7.5	9.2	7.5
Standard deviation	1.4	1.5	1.9	2.5
P-value		0.002		0.021
Probing Pocket Depth (PPD)				
Mean	6.3	3.0	6.4	3.5
Standard deviation	1.0	1.0	1.5	1.2
P-value		<0.001		<0.001

Tables. Comparison of Clinical outcomes (mm) after 6 months

Baseline vs. 6 months	EMD Mean ± Standard deviation	Ostim Mean ± Standard deviation	P-value
PPD Reduction	3.2 ± 1.4	2.9 ± 1.8	0.50
RAL Gain	2.1 ±1.8	1.7 ± 2.1	0.82
Bone Fill	1.5 ± 1.3	1.5 ± 1.7	0.75

a) Early – Wound – Healing Index (EHI)

b) patients' perceptions

Fig 3. (a, b)

Conclusion

In both treatment procedures (Emdogain® and Ostim®) regenerative periodontal surgery in deep intrabony defects resulted in significant clinical improvement after 6 months compared to baseline. Further investigation is needed to identify factors influencing individual responses.