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Full-mouth versus partial-mouth recording in experimental gingivitis studies

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Introduction

Clinical indices are the most widely used parameters for the assessment of plaque and gingivitis in clinical trials on oral hygiene products. However, a full-mouth recording of these indices is the most time consuming part of a study. In 1959, Ramfjord introduced a partial mouth recording system which included six teeth and their replacement teeth when the tooth of first choice is missing. In further studies it was proven that these so called "Ramfjord teeth" could be used in epidemiological studies to describe the extent of gingivitis (Fleiss et al. 1987).

Objectives

Therefore, the aim of this investigation was to determine whether correlations exist between full-mouth and partial-mouth recording of plaque, gingivitis, and discoloration in Experimental Gingivitis (EG) studies.

Material and Methods

A 21-day experimental gingivitis study was conducted preceded by a 2-week recruiting phase. The clinical controlled, randomized trial was performed according to the regulations of Good Clinical Practice.

Study populations:

Group A: 79 dental students (PII \leq 0.5) Group B: 78 participants from a local population (PII \geq 1.0)

Mouthrinses:

Chlorhexidine 0.20% Chlorhexidine 0.06% Amine fluoride/stannous fluoride (ASF) Negative control (placebo)

Parameters:

Plaque index (PII, Silness & Löe 1964)
Gingival index (GI, Löe et al. 1967)
Discoloration index (DI, Brecx et al. 1993)
At all time points full-mouth recording of the indices was performed in all treatment groups.

Time points of parameter recording:

Recruiting week 14 days prior baseline, Baseline (D 0), Follow up after 7 days, After 14 days, Final visit after 21 days (D 21).

Statistics:

The means of full-mouth recording were calculated and compared to the means of the six "Ramfjord teeth" in each participant. Pearson correlation coefficients ($p \le 0.05$) were calculated to compare between full-mouth and partial-mouth approach.

Results

- Statistically significant correlations between full-mouth and partial-mouth approaches were determined for GI, PII, and DI (p < 0.000).
- Correlations existed at all time points and in all mouthrinse groups.
- The majority of the correlations exceeded 0.90 but 0.70 in any case.
- When the means of the full-mouth recording were compared to the means of the "Ramfjord teeth", the differences were not higher than 0.07.

Group A

Baseline	Placeb	0	ASF		0.06%	CHX	0.20%	CHX
	R	p	R	р	R	р	R	р
PII	0.962	0.000	0.936	0.000	0.962	0.000	0.732	0.000
GI	0.962	0.000	0.936	0.000	0.962	0.000	0.949	0.000
DI	0.861	0.000	0.784	0.000	0.711	0.000	0.802	0.000

Table 1: Index correlations between full-mouth and partial-mouth approach at baseline; Pearson correlation coefficients (R) and p-values

Baseline	Placebo		ASF		0.06%	СНХ	CHX 0.20% CHX		
	R	р	R	р	R	р	R	р	
PII	0.974	0.000	0.916	0.000	0.965	0.000	0.995	0.000	
GI	0.979	0.000	0.968	0.000	0.947	0.000	0.965	0.000	
DI	0.926	0.000	0.979	0.000	0.973	0.000	0.954	0.000	

Table 2: Index correlations between full-mouth and partial-mouth approach at D 21; Pearson correlation coefficients (R) and p-values

Group B

Baseline	Placebo		ASF		0.06%	СНХ	0.20% CHX		
	R	р	R	р	R	р	R	р	
PII	0.974	0.000	0.950	0.000	0.963	0.000	0.966	0.000	
GI	0.986	0.000	0.920	0.000	0.980	0.000	0.967	0.000	
DI	0.906	0.000	0.945	0.000	0.900	0.000	0.927	0.000	

Table 3: Index correlations between full-mouth and partial-mouth approach at baseline; Pearson correlation coefficients (R) and p-values

Baseline	Placebo		ASF		0.06%	CHX	0.20%	CHX		
	R	р	R	р	R	p	R	р		
PII	0.966	0.000	0.911	0.000	0.914	0.000	0.970	0.000		
GI	0.965	0.000	0.974	0.000	0.985	0.000	0.970	0.000		
DI	0.939	0.000	0.963	0.000	0.958	0.000	0.985	0.000		

Table 4: Index correlations between full-mouth and partial-mouth approach at D 21; Pearson correlation coefficients (R) and p-values

Conclusions

Assessment of the "Ramfjord teeth" is as reliable as the full-mouth scoring in Experimental Gingivitis studies. The assessment of the "Ramfjord teeth" saves time for both participants and investigators, reduces costs, and results in a study simplification without distorting the outcome.

The study was supported by GABA International AG.

Literature

- 1. Ramfjord SP: Indices for prevalence and incidence of periodontal disease. J Periodontol. 1959, 30, S. 51-59.
- 2. Fleiss JL, Park MH, Chilton NW, Alman JE, Feldman RS, Chauncey HH: Representativeness of the "Ramfjord teeth" for epidemiologic studies of gingivitis and periodontitis. Community Dent Oral Epidemiol. 1987,15, S. 221-224.

Abbreviations

EG = Experimental Gingivitis

PII = Plaque index

GI = Gingival index

DI = Discoloration index

D 0 = Day 0 (Baseline)

D 21 = Day 21 (Final visit after 21 days)

This Poster was submitted by Dr. Katrin Lorenz.

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Poster Faksimile:

FULL-MOUTH VERSUS PARTIAL-MOUTH RECORDING IN EXPERIMENTAL GINGIVITIS STUDIES

(U)#1187

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OBJECTIVES

Clinical indices are the most widely used parameters for the assessment of plaque and gingivitis in clinical trials on oral hygiene products. However, a full-mouth recording of these indices is the most time consuming part of a study. Therefore, the aim of this investigation was to determine whether correlations exist between fullmouth and partial-mouth recording of plaque, gingivitis, and discoloration in Experimental Gingivitis (EG) studies.

RAMFJORD TEETH



Ranford EP, indices for prescience and incidence of periodottal disease. J Periodottol. 1658; 20:51-0 In 1959 Ramford introduced a partial mouth recording system which included six teeth and their replacement teeth when the tooth of first choice is missing.

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STATISTICS

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Pearson correlation coefficients (p \leq 0.05) were calculated to compare between full-mouth and partial-mouth approach.

RESULTS

Group A

Deserve	Placebo		A	SF .	0.009	XHO+	0.20%-CHX		
			R	p	R		R	p	
Pi	0.962	0.003	0.936	0.008	6902	0.000	0.732	8.300	
CH	0.962	0.000	9.936	0.008	690	0.000	0.949	0.000	
DI	0.861	0.509	0.794	0.000	6.711	0.000	9.802	0.000	

0.21	Placebo		ASF		0.09% CHX		0.30%-CHX	
					R	p	R	

021	Par	Placebo		W.	6.00% CHX		0.30%-CHX	
		p	R	9	R	p	R	p
PI	0.974	0.000	0.916	0.008	0.965	0.000	0.995	0.300
GI .	0.979	0.000	0.968	0.000	0.907	0.000	0.065	0.300
DI .	0.926	0.000	8.979	0.000	0.973	0.000	0.954	0.300

lee.	Pa	odec		SF	6.069	CHX	0.209	CHX
	R		Я		R	P	R	p
	0.574	0.000	0.950	0.000	0.963	E.000	0.966	0.000
	0.366	0.000	0.500	0.000	0.960	5,000	0.967	0.000
	0.906	0.000	0.945	0.000	0.900	6,000	0.927	6.000

Group B

021	Plan	wbo	A	¥	0.06%	OOK	6.20%	CHX
	R	P	R	9	R	9	R	P
PIL	0.960	0.000	0.911	0.000	0.914	£.000	0.570	2.000
QI .	0.965	0.000	0.574	0.000	0.965	1.000	0.570	0.000
D)	0.000	0.000	0.665	0.000	0.048	2.000	0.645	200

RESULTS

- Statistically significant correlations between full-mouth and partial-mouth approaches were determined for GI, PII, and DI (p < 0.000).
- Correlations existed at all time points and in all mouthrinse groups.
- The majority of the correla exceeded 0.90 but 0.70 in any case.
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