

الله جميل و يحب الجمال

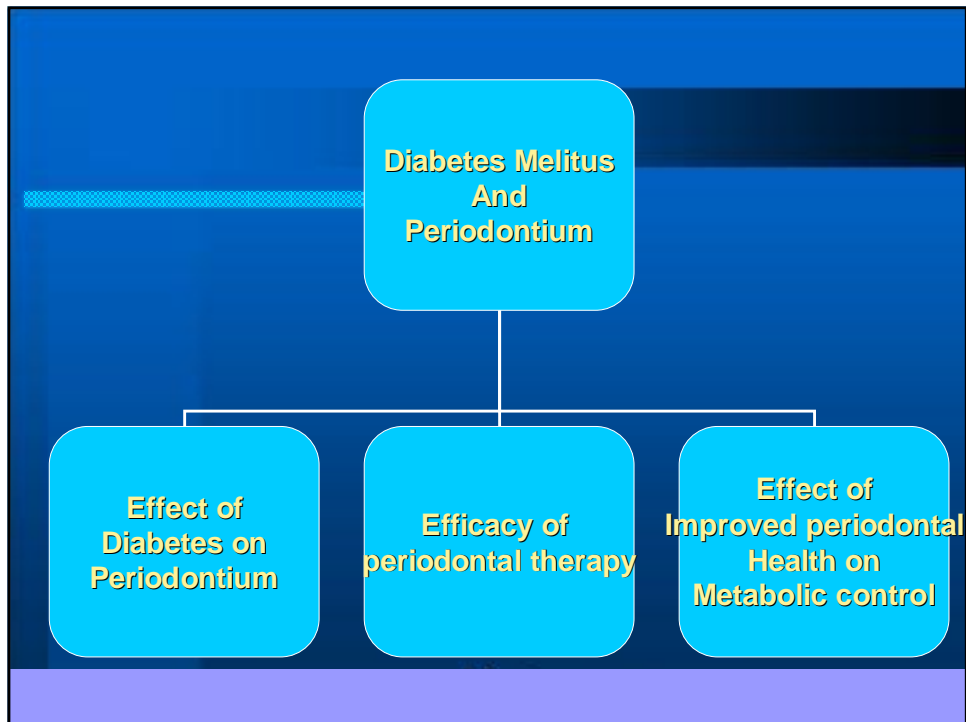
A Systemic Review on Non-surgical
Periodontal Therapy Effect in
Diabetics

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Introduction

- | DM is clinically and genetically heterogenous group of disorders affecting the metabolism of carbohydrates, lipid, and proteins.
- | Hyperglycemia
- | deficiency of insulin secretion
- | insulin resistance in liver/muscles

Introduction

- | The raise in prevalence & incidence of diabetes is directly related to increasing obesity rates

Body Mass Index (BMI)

Normal	<25 kg/m ²
Overweight	25-30
Obese	>30



Differentiation

- | **Prediabetes** - elevated blood glucose levels under certain condition
- | Intermediate stage
 - | Impaired fasting glucose
 - | Impaired glucose tolerance
- | 85-90% type2
- | 5-10% type1
- | Gestational/Secondary form



I Lab test

- I Impaired fasting glucose
- I hyperglycemia limited to periods of fasting

- I Impaired glucose tolerance
- I after glucose load

- I IFG+IGT ----- strong predictor(30-40%) for future type2 diabetes(within 10 years)

- I IGT ----- significant predictor of MI & stroke

I American Diabetes association 2005

Symptoms + casual plasma glucose >200 mg/dl

IFG: 100-126 mg/dl

FBS >126 mg/dl

IGT: 140-199 mg/dl

2h postload glucose >200 mg/dl

Patient Overall Glycemic Control (HbA1c)

Glucose binding to hemoglobin is highly stable

Life span of erythrocyte: 123 +/- 23 days

Average blood glucose level over preceding 30-90 days

(HbA1c)	Mean Plasma Glucose
----------------	----------------------------

6%	135 mg/dl
7%	170
8%	205
9%	240
10%	275
11%	310
12%	345

(HbA1c)

Interpretation

<6%

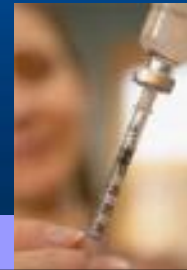
Normal Value

>7%

Diet, exercise, medication

≥8%

Physician intervention



Searching

- | English language literatures over the last 20 years
- | National Library of Medicines Entrez Pubmed search engine

Periodontitis & diabetes

- | **44 out of 48 reviewed articles showed an increased severity of periodontal destruction in diabetic patients**

- | Cianciola et al 1982
- | Emrich et al 1991
- | Hugoson et al 1989
- | Nelson et al 1990
- | Taylor et al 1998



Periodontitis & diabetes

- | Mattout C, Bourgeois D, Bouchard P. Type 2 diabetes and periodontal indicators: epidemiology in France 2002-2003. J Perio Res 2006;41:253-8.

- | **2144 adults (35-65 years)**
- | **Prevalence: 3.3%**



	%sites with PD>5mm	%sites with CAL>4mm
No systemic Diseases	14.4	42.1
IDDM	19.3	54.2
NIDDM	21.1	45.0
P Value	<0.001	<0.10

well controlled	Poorly glyceemic control
28% of sites >15% bone loss	44%
	Odds Ratio of progressive bone loss 11.4

Effect of periodontal treatment on the periodontium of diabetics

Conventional periodontal therapy is effective

Chemotherapy is not necessary

- Bay et al 1974
- Westfelt et al 1996
- Christague 1998

- 5 years implant survival rates was 90%
- 7.8% failure rates compared to 6.8%

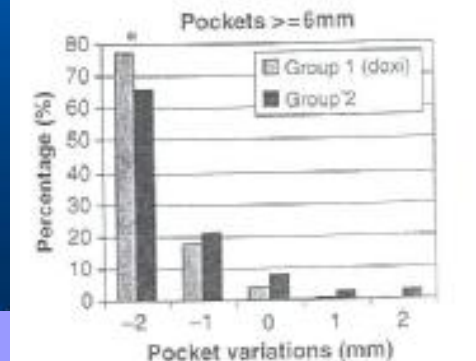
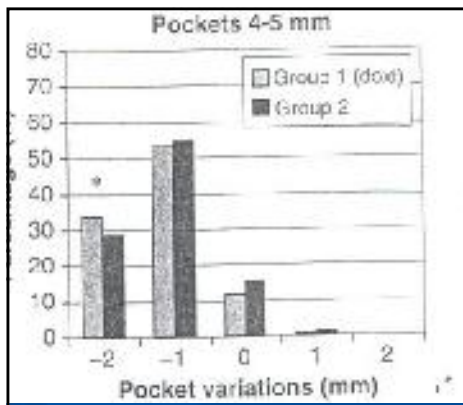
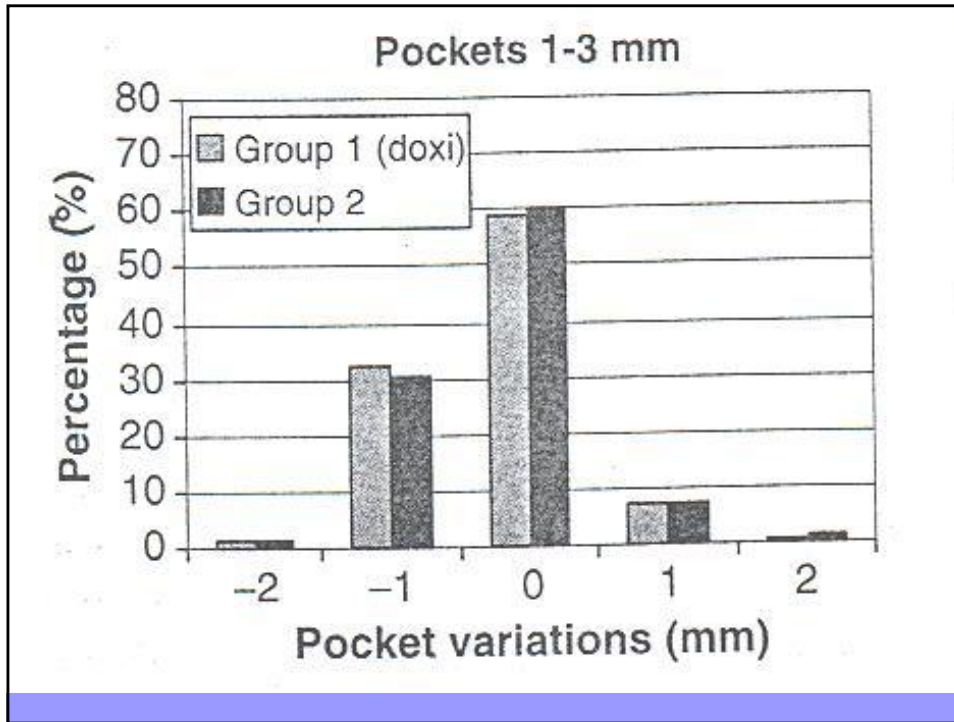


Effect of periodontal treatment on the periodontium of diabetics

Conventional periodontal therapy is effective

- If diabetes is not well controlled, periodontal recurrences will be more frequent over the subsequent 12 months and periodontal disease more difficult to control

- Seppala et al 1993
- Tervonen & Karjalainen 1997



Effect of periodontal treatment on the diabetes control

No influence

Wolf et al 1997
Seppala & Ainamo 1994
Seppala et al 1993
Aldridge et al 1995
Westfelt et al 1996
Smith et al 1996
Christgau 1998



Effect of periodontal treatment on the diabetes control

Diabetes control could be improved especially when doxycycline used as an adjunct

Miller et al 1992
Grossi et al 1996,1997
Iwamoto et al 2001
Llambes et al 2005
Kiran et al 2005