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The Assessment of Serum Lipid Level Among a Sample of Kuantan Patients with Periodontal Diseases

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INTRODUCTION

The study of the prevalence of periodontitis in adults in the United States, 2009 and 2010, demonstrated that Over 47% of the sample (3,742 adults aged 30 years and older), representing 64.7 million adults, had periodontitis. Epidemiological research of hypercholesterolemia indicated that elevated LDL cholesterol is a major cause of CHD (Genest et al, 1991). Moreover, the cholesterol and especially LDL play an essential role in the development of atherosclerosis (Stamler et al, 1986). Furthermore, recent reports focused on the inflammation task as an additional etiological factor in the development of atherosclerotic lesions (Ross, 1999; Hanson, 2005). There are studies suggesting that periodontal disease can cause elevation in serum lipid level[7,8]
the interest of our study is to rule out the relationship between periodontal disease and serum lipid level, clarifying its link to various systemic diseases related to hyperlipidemia.

OBJECTIVES

This study was to explore the relationship between periodontal diseases and serum lipid level, investigating its link to various systemic diseases related to hyperlipidemia.

MATERIALS AND METHOD

Following protocol review and approval by Research Committee Board of Kulliyyah of Dentistry and obtaining the ethical approval from ethics committee of International Islamic University Malaysia, subjects were recruited from patients who referred to periodontal clinic, for periodontal therapy between December 2011 and July2012 with specific inclusion criteria. All patients were informed verbally about the purpose of the study and assigned a written informed consent that obtained after explaining the details of clinical procedures prior to participation. After the interview, and the detailed periodontal examination, 41 patients were enrolled in this study (in fact they were 41 patients, but 11 of them didn't comply with the requirement , so the study ended up with only 30 patients). At a **baseline visit,** from all recruited participants, complete medical and dental history was taken using a written questionnaire including their socioeconomic status . Standard clinical periodontal parameters were recorded, (Bleeding on Probing BOP, *Greenstein 1984*, full mouth plaque scores, pocket depth, and clinical attachment loss) using a Goldman/Fox Williams probe calibrated in millimetres by one calibrated examine. Subjects were referred to Blood Laboratory of Kuantan Specialist Hospital Sdn. Bhd. for sample collection and assessment. Five milliliters of fasting (12 hours) venous blood sample was drawn and tested for the systemic levels of total cholesterol, triglyceride (TG), high-density lipoprotein (HDL) and low-density lipoprotein (LDL).

RESULTS

Variable	Mean
Plaque scores	79 (18)
BOP	58.6 (31.7)
Percentage of sites with PD 4–6 mm	9.7 (8.4)
CAL	3.8 (0.8)
Low-density lipoprotein cholesterol mmol/L	2.8 (0.8)
High-density lipoprotein cholesterol mmol/L	1.6 (0.6)
Total cholesterol mmol/L	4.9 (1)
Triglycerides mmol/L	1.2 (0.5)

Descriptive Statistics

Data are given as mean (standard deviation) unless stated otherwise
BOP, bleedin g on probing
PD, probing depth
CAL, clinical attachment loss

		TCOL	TG	HDL	LDL
PS	r	.186	.130	.138	.053
	Sig.	.584	.703	.687	.878
%PD(4-6)	r	.140	.043	.073	.025
	Sig.	.682	.900	.831	.941
CAL	r	.322	-.174	.118	.427
	Sig.	.335	.609	.729	.190

r, Pearson Correlation
TCOL, total cholesterol
TG, triglyceride
HDL, high-density lipoprotein
LDL, low-density lipoprotein

CONCLUSION

This study demonstrated that patients with periodontal disease have no significant correlation with serum lipid levels, however subjects with increased level of bleeding on probing reflected significant non-desirable level of HDL (p = 0.006)

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