

SALIVARY MELATONIN LEVELING PREGANANCY IN PERIODONTAL DISEASES

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Melatonin possesses antioxidant, free-radical scavenging, and immunoenhancing properties that promote fibroblast activity and bone regeneration.¹ The pineal gland produces melatonin in a circadian manner, synchronizing a number of biological processes in a 24-hour, day night rhythm.² Melatonin is diffuse after release of melatonin into the blood stream.^{3,4}

Periodontal disease are a group of infectious diseases caused by predominantly anaerobic, gram-negative and micro aerophilic bacteria that colonize the subgingival area. Inflamed periodontal tissues produce significant amounts of pro-inflammatory cytokines,

mainly interleukin 1 beta (IL-1B), IL-6, prostaglandin E₂, and tumor necrosis factor alpha (TNF- α), which may have systemic effects on the host. Melatonin has a critical function in the regulation of proteins implicated as mediators of these processes. Hence, the aim of this study was to examine the relationship between the level of salivary melatonin and pregnancy periodontitis.

The 47 periodontitis patients (30 pregnant; 27 non-pregnant) females, with 19-35 years were selected for study. Criteria for inclusion (pregnant) with periodontitis were: women aged 19-35, with Singleton gestation, before 21 week's gestation. Exclusion criteria include: fewer than 18 teeth, indication of prophylactic antibiotic for invasive procedures, or diabetes.

Criteria for inclusion (non-pregnant with periodontitis) were: women aged 20-35 year without any systemic diseases, while pregnant women excluded. The normal

Table-I: Periodontal characteristics of patients and salivary melatonin level

Parameters	Pregnant women With periodontitis (n=30)	Non pregnant women with perio- dontitis (n=27)	Normal women without periodontitis (n=10)
Number teeth	26.6±3.1	27.1±3.2	28.3±2.1
Percentage of sites With: Plaque	87.3 ± 11.3	77.4 ± 10.3	34.4 ± 11.4
Bleeding on probing	63.7 ± 18.3	61.2 ± 17.2	12.3 ± 11.2
Probing depth ≥5mm	42.5 ± 13.2	41.2 ± 14.2	1.2 ± 1.3
Attachment level Site ≥ 4 mm	43.2 ± 12.1	41.1 ± 13.1	1.3 ± 1.2
Mean probing depth (mm)	6.3 ± 1.3	5.3 ± 1.2	2.1 ± 1.2
Mean attachment level (mm)	5.3 ± 1.2	5.1 ± 1.3	12.2 ± 1.3
Salivary melatonin Level (Pg/ml)	1.62 ± 0.32	1.83 ± 0.43	2.43 ± 0.42

* P < 0.001

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female without periodontitis, with 18-35 year without any systemic disease. None of subjects were non-smokers, non-alcoholic, none drug treatment, non-periodontal treatment and no systemic diseases.

Periodontal status: A clinical periodontal examination was performed using periodontal probe (H4-Friedy). The presence of 5 or more

teeth showing one or more sites with probing depth 5mm or higher, and with clinical attachment loss 4 mm or higher at the same site, was diagnosed as periodontal disease (Table-I). These criteria were selected for the clinical definition of patients the positively and unequivocally exhibited periodontal disease.

Measurement of salivary melatonin levels:

Participants were prohibited from eating after midnight on the day of saliva sample collection, which was carried out around 9:15 am. The saliva produced in the first three minutes was discarded, and only the saliva generated in the remaining three minutes was collected and centrifuged at 5,000 rpm for 15 minutes. The super natant was collected and frozen at -4°C until analysis. Salivary melatonin levels were measured by radio immunoassay as in previous study.¹ The data were analysed by student 't' test (SPSS version 11.0).

Preganant women with periodontitis had lower level of salivary melatonin levels as compared to non-pregnant women with periodontitis and normal women (Table-1, $P < 0.01$). The clinical parameters were also statistically significant between pregnant women with periodontitis non preganant women with periodontitis and normal control (Table-I, $P < 0.001$).

The lower levels of salivary melatonin may be due to ability to fight against infection and inflammation, probably due to its antioxidant, anti-aging, and immuno-enhancing action and stimulating of osteoblastic differentiation.^{1,4,5}

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ALKAPTUNURIA

I was interested to read the excellent case report on Alkaptunuria by Nafees and Muazzam in Pakistan Journal of Medical Sciences in Vol. 23 No.4 July-September 2007.¹

In 1972, I reported a case of Alkaptunuria in an eighteen years old male.² The patient born of a consanguineous marriage came for the treatment of diabetes mellitus. His urine when checked with benedict reagent turned black. This was confirmed by various relatively modest tests such as NaoH silver nitrate and fehling test. He had no stigma of the disease and was prescribed high doses off ascorbic acid. He was however lost to follow up.

As the authors rightly remark, the main challenge is to prevent the onset of this rather devastating disease for which no satisfactory preventive treatment is presently available.

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