

Evaluation of the level of Melatonin, Cortisol and IgA in saliva of Patients with Oral Lichen Planus Lesions

A thesis

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Abstract

Background

Oral lichen planus is a chronic inflammatory disease that affects the mucous membrane of the mouth. Several researchers suggest that oxidative stress is implicated in the pathogenesis of this disorder. Exposure to oxidative stress can lead to liberation the reactive oxygen species that related to the most inflammatory conditions of the deadly diseases. It has been hypothesized that melatonin, cortisol and secretory immunoglobulin A are interrelated factors for the emergence of oral lichen planus through their existing features as the melatonin hormone, a powerful anti-oxidants and can easily cross the cell membrane and is considered a free radical scavenger of Hydroxid , Oxygen and Nitrogen dioxide.

Cortisol is a stress hormone and it is well known that stress is one of the factors that prompted the emergence of oral lichen planus. Immunoglobulin A is considered the first line of defense and protection of the mucous membrane of the mouth.

Aims of the study

Aim of this study was to evaluate the level of melatonin, cortisol and IgA in saliva of patients with oral lichen planus lesions in comparison with participants with normal oral mucosa in addition to evaluate their levels before and after using topical treatment with triamcinolon acitonid for one week duration.

Methods

Seventy five specimens of saliva were collected from two groups of participants (34 patients with histologically confirmed oral lichen planus, 41 participants with normal oral mucosa). The specimans were centrifuged and divided into three parts. High performance chromatography analyzing technique was used for estimating the salivary melatonin and salivary cortisol levels. The ELISA kit was used for estimating the salivary SIgA level. The levels of the three variables in the patients

were compared with that of participants having normal oral mucosa. Furthermore the topical triamcinolon acitonide was described to the patients with oral lesion three times daily for one week then the level of those three parameters was compared pre and post medication in saliva samples.

Results

Most oral lichen planus disease was among female patients which have represented 85.3% of the total number and 14.7% were males. The most frequent clinical form of oral lichen planus was the Reticular form 52.9% followed the erosive form 26.5% and the least one was the plaque like form 20.6%.

The mean salivary melatonin level in patients with oral lichen planus was 4.786 µg/ml and the mean saliva melatonin level in normal person was 8.759 µg/ml. Significant difference was observed in the salivary melatonin levels between the study and control group ($p < 0.01$). Significant difference was also seen in salivary melatonin at pre and post medication period in the study group.

The mean salivary cortisol level in patients with oral lichen planus was 0.730 µg / ml and the mean saliva cortisol level in normal persons was 0.165 µg/ml. Significant difference was observed in the salivary cortisol levels between the study and control groups ($p < 0.01$). Salivary cortisol level was higher post medication than that level pre medication.

The mean salivary IgA level in patients with oral lichen planus was 221.4 µg/ml and the mean saliva IgA level in normal person was 125.8 µg/ml. Results showed that levels of saliva IgA in patients after medication with triamcinolon acitonide was less than that pre medication.

Conclusion

Findings revealed the mean salivary melatonin level in patients with oral lichen planus was less than that in participants with normal oral mucosa. Salivary melatonin levels were increased after medication with triamcinolon acitonide.

Results also showed that the mean salivary cortisol level in patient with oral lichen planus was higher than that of the normal persons. Salivary cortisol levels were increased when comparing before and after medication. The salivary IgA levels in patients with oral lichen planus were higher than that in the control group and this level in the study group decreased when comparing before and after using triamcinolon acitonid as topical medication.