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# **Salivary TNF- $\alpha$ as disease activity marker in oral lichen planus**

**Thesis**

Submitted in Partial Fulfillment of the requirement for the  
Master Degree  
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*To my dear father, to my forever loving mother,  
Couldn't have reached here without your love and  
guidance.*

*To my lovely sisters and my dear husband for his  
always helping and supporting, for my sweetheart  
Lamar.*

*Thank you for your constant inspiration and  
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## *Contents*

❖ Introduction	1
❖ Review of literature	3
❖ Aim of The Study	33
❖ Subjects and Methods	34
❖ Results	54
❖ Discussion	72
❖ Summary and Conclusion	82
❖ References	87
❖ Arabic summary	

## *List of figures*

<i>Figure no.</i>	<i>Heading</i>	<i>Page</i>
<i>Figure (1)</i>	Clinical photograph showing papular type of oral lichen planus in one of included patients.	36
<i>Figure (2)</i>	Clinical photograph showing atrophic case of OLP overlying diffuse melanotic base (pigmented lichen planus) before treatment.	39
<i>Figure (3)</i>	Clinical photograph showing complete disappearance of the atrophic type of OLP after treatment	39
<i>Figure (4)</i>	Clinical photograph showing erosive type of OLP before treatment.	40
<i>Figure (5)</i>	Clinical photograph showing improvement in the erosive type of OLP after treatment.	40
<i>Figure (6)</i>	Photomicrograph of H& E stained specimen of one of the OLP cases.	41
<i>Figure (7)</i>	TNF- $\alpha$ /TNF SF1A Immunoassay ELISA kit.	45
<i>Figure (8a)</i>	Showing microplate reader.	49
<i>Figure (8b)</i>	Showing ELISA technique.	50
<i>Figure (9)</i>	Showing standard curve for calculation of samples	53
<i>Figure (10)</i>	Histogram comparing mean age in all patients' groups.	58



<i>Figure (11)</i>	Pie chart showing the gender distribution in erosive OLP group.	59
<i>Figure (12)</i>	Pie chart showing the gender distribution in papular OLP group.	59
<i>Figure (13)</i>	Pie chart showing the gender distribution in atrophic OLP group.	59
<i>Figure (14)</i>	Histogram comparing gender distribution in all patients' group.	60
<i>Figure (15)</i>	Distribution chart showing salivary TNF- $\alpha$ results for all groups before treatment	62
<i>Figure (16)</i>	Distribution chart showing salivary TNF- $\alpha$ results for the erosive and the atrophic groups after treatment compared to control group.	63
<i>Figure (17)</i>	Histogram showing results of erosive group before and after treatment.	67
<i>Figure (18)</i>	Histogram showing results of atrophic before and after treatment.	67
<i>Figure (19)</i>	Histogram comparing all groups before and after treatment with each other.	68
<i>Figure (20)</i>	Histogram comparing all groups before and after treatment with control group.	68

## *List of tables*

<i>Table no.</i>	<i>Heading</i>	<i>Page</i>
<i>Table (1)</i>	Summarized major biological effects of TNF- $\alpha$ .	23
<i>Table (2)</i>	Material content of TNF- $\alpha$ kite	46
<i>Table (3)</i>	Descriptive data for included groups.	55
<i>Table (4)</i>	Statistical analysis of age in all patients' groups.	57
<i>Table (5)</i>	Statistical analysis for gender in all patients' groups.	57
<i>Table (6)</i>	Statistical analysis for salivary TNF- $\alpha$ level among patients' groups before and after treatment.	66
<i>Table (7)</i>	Statistical analysis for salivary TNF- $\alpha$ level among patients' groups before treatment compared to control group.	66
<i>Table (8)</i>	Statistical analysis for salivary TNF- $\alpha$ level among patients' groups after treatment compared to control group	66
<i>Table (9)</i>	Statistical analysis comparing erosive and papular types before treatment using Student t test.	70
<i>Table (10)</i>	Results of Student t test comparing atrophic and papular groups without treatment.	70
<i>Table (11)</i>	Statistical analysis comparing erosive and atrophic before treatment by using Student t test.	71
<i>Table (12)</i>	Statistical analysis comparing erosive and atrophic after treatment using Student t test	71

# (ABSTRACT)

## باللغة العربية:

يمكن للعب ان يستخدم كبديل بيولوجى للبلازما حيث انه يحتوى على دلائل كالموجودة بالبلازما والتي تستخدم فى تشخيص الامراض ، بالاضافة الى سهولة سحب عينات اللعاب من المرضى. وحديثا يعتبر عامل التنكز الفا باللعاب وسيلة للكشف عن الحزاز الفموى المنبسط. و يلعب امل التنكز الفا دورا هاما فى مناعة الجسم والوقاية من الامراض كما انه يؤثر على نمو الخلايا وتطورها.

والهدف من البحث امكانية استخدام عامل التنكز الفا فى اللعاب فى تشخيص ومتابعة النشاط المرضى للحزاز الفموى المنبسط قبل وبعد العلاج. وقد اجريت الدراسة على ٦٠ شخص لا يعانون من اى امراض عضوية ولا يتعاطون اى ادوية. وكان التحسن الاكلينيكي بعد علاج الحزاز الفموى المنبسط بالكورتيزون مصحوب بنقص فى مستوى عامل التنكز الفا فى اللعاب ولكنه لم يصل الى المعدل الطبيعى.

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# **(ABSTRACT)**

## **باللغة الانجليزية:**

Saliva may offer an alternative to serum as a biologic fluid that can be analyzed for diagnostic purposes. Whole saliva contains locally produced as well as serum-derived markers that have been found to be useful in the diagnosis of a variety of systemic disorders. Salivary TNF- $\alpha$  level estimation has gained appreciation as a disease activity marker in mucosal lesions as oral lichen planus. So the aim of the present investigation was to detect the feasibility of utilizing salivary TNF- $\alpha$  level estimation in the detection of disease progress and severity in oral lichen planus before and after treatment. The obtained results showed a highly significant increase in salivary TNF- $\alpha$  level in all OLP patients when compared to the control group. Among OLP patients, the atrophic type, followed by the erosive (before treatment) showed the highest values, and even after reaching clinical remission, both groups still showed levels with highly significant increase compared to the control group. The atrophic group mean salivary TNF- $\alpha$  value was even still higher after corticosteroid therapy than the papular group.

## **Key words**

Oral lichen planus , salivary level , tumor necrosis factor-

## **Introduction**

Oral lichen planus (OLP) is a chronic inflammatory condition involving the oral mucosal tissues. Symptoms can range from none, with the patient being unaware of the presence of intraoral lesions, to extremely painful lesions, which may interfere greatly with eating and thus significantly affect the quality of life (**Sugerman et al., 2002**).

Although the etiology and mechanisms of OLP pathogenesis have not been fully disclosed, several lines of evidence have demonstrated that a complex cytokine network, especially, the activation and expression of TNF- $\alpha$ , plays an important role in the exacerbation and perpetuation of the lesions (**Sugerman et al., 2002**).

TNF- $\alpha$  is a multifunctional cytokine that plays a prominent role in immune and host defense responses to infection, influences tissue remodeling and takes part in regulation of cell proliferation and differentiation. Therefore, the detection of TNF- $\alpha$  in OLP is likely to have clinical potential for monitoring disease activity and therapeutic response of the disease (**Pezelj-Ribaric et al., 2004**).

Treatment is administered primarily to control symptoms, since there is no established cure. Close follow-up is suggested, not only to monitor medications for discomfort, but because of an established risk, albeit small, of squamous-cell carcinoma developing in areas of OLP.

Systemic and topical corticosteroids have been the most reproducibly effective medications to control symptoms and signs of the disease ( **Silverman et al., 2000 and Van der Meij et al., 2003**).

**Pezelj-Ribaric et al. (2004)** pointed out to the importance and availability of salivary analysis for cytokine levels particularly TNF- $\alpha$  in monitoring disease activity OLP cases.

Oral fluid analysis has some obvious advantages compared with blood-based analyses, such as easy access and non-invasive collection; oral fluids have been widely used in drug and disease monitoring and the detection of various oral and systemic maladies (**Kaufman and Lamster, 2002**).

Oral fluids have been successfully applied for detection of s-IgA, apoptotic cells, and pro-inflammatory cytokines in patients with Sjogren's syndrome, OLP, oral leukoplakia and oral squamous cell carcinoma (**Rhodus et al., 1998, 2005 and Cheng et al., 2004**).

Consequently, it was found of interest to study the changes in salivary TNF- $\alpha$  level among different forms of OLP before and after corticosteroid therapy.