DETECTION OF FAS LIGAND AS A MARKER OF APOPTOTIC CELLS IN SALIVA AND SERUM OF PATIENTS WITH ORAL LICHEN PLANUS

THESIS

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بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

وَلَسَوْفَ يُعْطِيكَ رَبُّكَ فَتَرْضَىٰ

صدق الله العظيم

Dedication

To my light when all was dark,

My Mother & Father…

To my hope when there was no hope,

My sisters & brothers….

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Abbreviations

- AIDS: acquired immune deficiency syndrome.
- AIF: apoptosis-inducing factor.
- Apaf-1: apoptotic protease activating factor.
- APCs: antigen presenting cells.
- ATP: Adenosine Tri-Phosphate.
- BAD: Bcl-2-associated death promoter.
- BAK: Bcl-2 homologous antagonist killer.
- BAX: Bcl-2–associated X protein.
- Bcl: B-cell lymphoma.
- BclXL :B-cell lymphoma-extra large.
- BID: BH3 interacting-domain death agonist.
- CCR: chemokine receptor.
- CD: cluster of differentiation.
- cGVHD: chronic graft versus host disease.
- CTL: cytotoxic T lymphocyte.
- DcR: decoy receptor.
- DCs: dendritic cells.
- DD: death domain.
- DIF: direct immunofluorescence.
- DISC: death inducing signaling complex.
- DFF: DNA fragmentation factor.
- DM: diabetes mellitus.
- DNA: deoxyribonucleic acid.
- ELISA: enzyme-linked immunosorbent assay.

- FADD: Fas-associated death domain.
- FasL: Fas ligand.
- GVHD: graft-versus-host disease.
- HCV: hepatitis C virus.
- HIV: human immunodeficiency virus.
- HLA: human leukocyte antigen.
- HRP: horseradish peroxidase.
- HSP: heat shock protein.
- HSV: Herpes simplex virus.
- IAP: inhibitor of apoptosis protein.
- ICAM-1: intercellular adhesion molecule.
- IFN –γ: interferon – gamma.
- Ig: immunoglobulin.
- I I F: indirect immunofluorescence.
- IL-12: interleukin -12.
- LCs: Langerhans cells.
- LP: lichen planus.
- LPS: lipopolysaccarides.
- MAC: mitochondrial apoptosis-induced channel.
- MHC: major histocomptability complex.
- MIF: macrophage migration inhibitory factor.
- MMPs: matrix metalloproteinases.
- NF- κB: nuclear factor–kappa B
- OLDR: oral licheniod drug reaction.
- OLL: oral lichenoid lesion.
- OLP: oral lichen planus.
- RANTES: regulated upon activation, normal T-cell expressed, and secreted).

- ROS: reactive oxygen species.
- SCC: squamous cell carcinoma.
- sFas: soluble Fas.
- sFasL: soluble Fas ligand.
- SMAC: second mitochondria-derived activator of caspases.
- TGF-β1: transforming growth factor beta 1.
- TNF-α: tumor necrosis factor-alpha.
- TNFR: tumour necrosis factor-receptor.
- TRADD: TNFR associated death domain.
- TRAIL: TNF-related apoptosis-inducing ligand.
- TRAILR: TNF-related apoptosis-inducing ligand receptor.
- VAS: visual analog scale.
- VZV: varicella-zoster virus: (human herpesvirus 3)
- WHO: world health organization.
- WUS: whole unstimulated saliva.

Contents

Introduction & Review of Literature

Lichen planus (LP) is a common mucocutaneous inflammatory disorder, occurs at sites of stratified squamous epithelia. LP affects 0.5–2% of the population, with notable variation by geography and diagnostic criteria **(Bethanee and Schlosser, 2010).**

It was first described clinically by the British physician, **Erasmus Wilson**, in (1896) and histologically by **Dubreuilh** in (1906). The frequency varies on the basis of the population studied, with a particularly high rate of disease noted on the Indian subcontinent.

LP is a disease of middle-aged people, although childhood-onset has also been well described. It is more frequently seen in females more than males in a ratio of 3:2 **(Bermejo et al., 2006).** LP is a self-limited condition that, according to one epidemiologic study, may resolve after1 month to 7 years. A range of topical and systemic medications have been shown to improve the symptoms associated with LP and to hasten its resolution **(Lehman et al., 2009).**

Patients with oral lichen planus (OLP) may develop lesions that affect the skin, skin appendages, or other mucosa **(Scully and Carrozzo, 2008).** Typically, the lesions that affect the skin are seen on the flexor surfaces of the forearms and are erythematous to violaceous, flat-topped, pruritic, polygonal papules that have a network of fine lines (Wickham's striae) on the surface, and develop within several months of the appearance of oral lichen planus (OLP) **(Scully and Carrozzo, 2008).**

Hypertrophic LP is marked by the development of hyperkeratotic, flat-topped plaques, typically affecting the anterior lower legs. Findings of bullous LP include vesicles and bullae, thus necessitating that other