

# ABSTRACT

## Oral lichen planus

### A study of associated factors with special reference to thyroid disease

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Oral lichen planus (OLP) is one of the most common and debilitating oral mucosal lesions in the adult population. Despite large research effort over the last decades, the aetiology of OLP remains an enigma. The current series of studies aimed to identify new potential aetiological factors for OLP.

The morbidity and prevalence of oral lichenoid reactions in a non-referral adult Swedish population of 6448 subjects was determined (**Study I**). The medication profile of patients with OLP (n=956) was compared with dental patients with no oral mucosal lesions (**Study II**). Based on the results from *studies I and II*, the prevalence of levothyroxine supplementation and profile of thyroid disease was established in a cohort of patients with OLP (n=1611) and compared to the general population (n=1615) (**Study III**). The clinical characteristics of patients with concomitant OLP and thyroid disease (n=108) were also investigated (**Study III**). Serum levels of antithyroid antibodies and thyroid hormones were analyzed in patients with OLP (n=108) and compared with different control groups (**Study IV**). Finally, the expression of thyroid proteins in OLP lesions (n=5) was determined and compared to healthy oral mucosa (n=5) (**Study IV**).

It was demonstrated that:

- Oral lichenoid reactions still represent one of the most common and debilitating oral mucosal lesions in the adult population (**Study I**).
- OLP is strongly associated with the use of levothyroxine (**Study II**).
- The prevalence of thyroid disease in patients with OLP is significantly higher compared to the general population (**Study III**).
- The clinical characteristics and the natural course of OLP lesions in patients with thyroid disease are different compared to those in patients with no thyroid disease (**Study III**).
- Patients with OLP without a previously diagnosed thyroid disease have high levels of TSH and low levels of FT<sub>4</sub>, indicative of thyroid disease (**Study IV**).
- Elevated levels of antithyroid antibodies could not explain the high prevalence of thyroid disease in patients with OLP (**Study IV**).
- Thyroid-stimulating hormone receptor is highly expressed in basal keratinocytes of OLP lesions (**Study IV**).

In conclusion, a subgroup of patients with OLP may have an aetiological background in common with thyroid disease. The reason for this connection remains to be determined, but it is likely that some mechanisms in autoimmune thyroid disease are involved in the pathogenesis of this group of patients suffering from OLP.

**Keywords:** oral lichen planus, oral mucosal lesion, epidemiology, levothyroxine sodium, thyroid disease, hypothyroidism, autoimmune thyroid disease, antithyroid antibodies, thyroid hormones.

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- I. **Robledo-Sierra J**, Mattsson U, Svedensten T, Jontell M. The morbidity of oral mucosal lesions in an adult Swedish population. *Medicina Oral Patología Oral Cirugía Bucal*. 2013 Sep 1;18(5):e766-72.
- II. **Robledo-Sierra J**, Mattsson U, Jontell M. Use of systemic medication in patients with oral lichen planus – a possible association with hypothyroidism. *Oral Diseases*. 2013 Apr;19(3):313-19.
- III. **Robledo-Sierra J**, Landin-Wilhelmsen K, Filipsson Nyström H, Mattsson U, Jontell M. Clinical characteristics of patients with concomitant oral lichen planus and thyroid disease. *Oral Surgery Oral Medicine Oral Pathology Oral Radiology*. In press.
- IV. **Robledo-Sierra J**, Landin-Wilhelmsen K, Filipsson Nyström H, Eggertsen R, Larsson L, Dafar A, Warfvinge G, Mattsson U, Jontell M. Levels of antithyroid antibodies and thyroid hormones in patients with oral lichen planus – a connection between two autoimmune diseases? *In manuscript*.



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