

## **LONG-TERM FOLLOW-UP OF PATIENTS WITH HYPOTHYROIDISM INDUCED BY AUTOIMMUNE THYROIDITIS SUBMITTED TO LOW-LEVEL LASER THERAPY**

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**Background:** A randomized clinical trial (RCT) to evaluate LLLT in patients with hypothyroidism induced by autoimmune thyroiditis was conducted from 2006 to 2009. Twenty three patients received LLLT (L-group) and 20 placebo (P-group). LLLT improved thyroid function and autoimmunity. The objective of this study was to evaluate long-term safety and effects of LLLT.

**Study:** After RCT, 2 patients of P-group were submitted to LLLT. Therefore, 25 patients were in L-group and 18 in P-group. Six years after RCT conclusion, patients were assessed by measurements of TSH, total T3, total T4, free-T4, anti-thyroperoxidase (anti-TPO), antithyroglobulin (anti-Tg) antibodies, as well as Doppler sonography (DS). DS evaluated presence of nodules, thyroid volume, thyroid vascularization pattern (TVP), peak systolic velocity of the inferior thyroid arteries (ITA-PSV) and their respective resistive indexes (ITA-RI). The nodules were submitted to fine needle aspiration biopsy (FNAB).

**Results:** All 43 patients were evaluated. The levothyroxine dose required by the L-group was significantly lower than in P-group ( $p = 0.002$ ). The proportion of patients with normal thyroid volume was higher in L-group ( $p = 0.03$ ) than in P-group. There was no significant difference in anti-TPO, anti-Tg, TVP, ITA-PSV and ITA-RI between groups. One nodule was observed in three patients of the L-group, all compatible with Bethesda II cytopathology pattern (benign). In P-group, one nodule was also observed in three patients. Two of them were compatible with Bethesda II and one with undetermined cytopathology (Bethesda III).

**Conclusion:** In conclusion, LLLT preserved long-term thyroid function, but its effects on autoimmunity observed in the RCT are transitory and new LLLT sessions for maintenance will be needed. The results demonstrated that LLLT is safe, since there was no increase in frequency of nodules in L-group and all of them were benign.

**#LB30**