Efficacy and safety of an outpatient low radiiodine dose for thyroid remnant ablation in low risk papillary thyroid carcinoma (PTC)

Gabriel Obiols¹, Amparo García-Burillo², Carles Zafon¹, Joan Castell-Conesa², Jordi Mesa¹

*Endocrinology Service¹, Nuclear Medicine Service²*.
*University Hospital Vall d’Hebron, Barcelona.*

**AIM:**
To evaluate the efficacy and safety of thyroid remnant ablation in patients with low-risk PTC by using 1100 MBq (30 mCi) outpatient doses

**PATIENTS / METHODS:**

- Twenty-five patients (24 women, 55 years-old mean age, range 34-77 years) referred for ablation of postsurgical thyroid remnants diagnosed with low-risk PTC (pT1-T2, N0, M0) were studied.

- After total thyroidectomy, an outpatient ablation was performed with a dose of 1100 MBq (30 mCi) of $^{131}$I under rTSH stimulation with strict radiation protection measurements and dosimetry control at home environment.

- Whole body scan (WBS and SPECT-CT) were performed on the fifth day. Control of therapeutic efficacy was performed at 6 months, using WBS and SPECT-CT with $^{123}$I after stimulation with rTSH.

- Basal and post-stimulated thyroglobulin and antithyroglobulin antibodies serum levels were determined in both studies.

- Ablation was considered successful when no abnormal activity was observed in the WBS and SPECT-CTs and when basal/stimulated thyroglobulin serum levels were under 1 ng/ml and 2 ng/ml, respectively.

**RESULTS:**

- All 25 patients showed thyroid remnants uptake without uptaking adenopathies in the WBS and SPECT-CTs performed on the fifth day after administration of $^{131}$I.

- In 23/25 patients (92 %), a successful ablation at the moment of the effectiveness control at 6 months was achieved:
  - One patient (5.1 ng/ml stimulated Tg) was re-treated with a new dose of 30 mCi
  - A second patient (2.3 ng/ml stimulated Tg) spontaneously normalized her basal and stimulated Tg levels at the 18-month control.

- None of the 25 patients presented any neck symptoms, nor xerostomy, nor nausea and vomiting, nor gastralgia and nor change in taste

- Dosimetry on family members showed exposure levels of less than 0.2 mSv.

**CONCLUSION**

- The postsurgical outpatient treatment with an activity of 1100 MBq is safe for the family environment and cost-effective in a great majority of patients with low-risk CDT.