Factors influencing successful radiiodine therapy of thyroid

**KEYWORDS:** Thyroid Neoplasms; Carcinoma; Iodine Radioisotopes; Treatment Outcome; Carcinoma, Papillary, Follicular

**Background:** Well-known fact is that the good surgical treatment, leaving only small residuals of thyroid tissue, is the outmost valid predictive factor of successful ablative radiiodine treatment. Assuming that all patients had state of the art surgical treatment, with this study we tried to evaluate other possible predictive factors of successful radiiodine therapy after total thyroidectomy.

**Methods:** Total of 56 patients (15 males and 41 females; mean age 43.37±13), operated during the year 2001 was evaluated. Due to differentiated carcinoma of the thyroid total thyroidectomy was done in 7 with follicular and in 49 patients with papillary cancer. Forty one patients received ablative 131I dose (3.7GBq) and fifteen patients received therapeutic dose (5.55GBq) of radiiodine therapy. As possible predictive factors the TNM classification (T1, 6; T2, 17; T3, 4; T4, 28 and 24 with N0; and 32 with N1), the number of foci on whole body scan (WBS), and the serum level of thyroglobulin were statistically evaluated. One year after radiiodine therapy control WBS was done and successful outcome of the therapy was considered to be the WBS without visible accumulation of radiiodine and with low serum level of thyroglobulin.

**Results:** Outcome of ablative radiiodine therapy was considered as successful in 55.4% patients and 44.6% of patients needed additional radiiodine therapies. Only the number of foci and the level of thyroglobulin showed statistically significant (p<0.05) influence on the outcome of applied radiiodine therapy.

**Conclusion:** Significant influence of the thyroglobulin level and number of foci on the WBS in patients with total thyroidectomy could be explained by the fact that there were the signs of minimum thyroid residual tissue, and that there were no microscopic spread of disease.