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Our experience from radioiodine-131 treatment and whole body scintigraphy findings in 357 patients with metastatic differentiated thyroid carcinoma after surgical ablation

To the Editor: We consider of interest our experience on the above subject as follows: From September 1991 to October 2005, in the Departments of Nuclear Medicine: in Ostrava, Czech Republic and in Martin, Slovak Republic, we have studied 357 patients with differentiated thyroid cancer (DTC), 70 men and 287 women, with a mean age of 48.4 y. Sixty-six patients had follicular cancer (18%), 214 papillary cancer (60%) and 77 a mixed follicular and papillary type of cancer (22%). From the 357 patients, 231 had one surgical thyroid ablation, 106 had two and 20 had three surgical ablations before. These patients were treated by iodine-131 (¹³¹I) after thyroid hormone treatment was withdrawn. Thyroid remnants were ablated with 3.7 GBq of ¹³¹I. Five days or 6-12 months after ¹³¹I treatment, a whole body scan (WBS) was performed. In the second case 300 MBq of ¹³¹I were administered. A hundred and thirteen patients were examined by WBS. A double headed single photon emission tomography (SPET) camera (Siemens ECAM, Germany) equipped with high-energy collimators was used for scanning. In 96 patients diagnostic WBS was negative (Table 1). Patients with a positive WBS were retreated by a standard dose of 7.4 GBq ¹³¹I. Treatment by thyroid hormones followed.

Thyroid stimulating hormone (TSH), free thyroxine (FT₄), total triiodothyronine (TT₃), thyroglobulin (Tg) and antithyroglobulin antibodies (TgAb) were tested in all patients. One patient was treated twelve times. The interest of our presentation lies on the following: a) By the WBS metastases in the kidneys, brain or skin were not detected [1]. b) In accord with our experience, favourable response to treatment was characterised by a parallel decrease of the tumour volume, the ¹³¹I uptake and serum Tg levels [2]. c) Preparing patients for radioiodine treatment we did not use recombinant human TSH for administrative and financial reasons [3]. d) Patients may take up to 66.6- 88.8 GBq of ¹³¹I within a 10 y period of time [4]. e) After one to twelve radioiodine treatment doses, the WBS in 85 percent of the patients was negative while normalization of Tg levels indicated successful ¹³¹I treatment [5]. This is a randomised study. Selected patients will be studied and presented in a forthcoming occasion.

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Table 1. Number of ¹³¹I treatments and whole body scan findings in our patients

No of ¹³¹ I treatments with 7.4 GBq	No of patients	Post ¹³¹ I treatment WBS		
		negative	positive	localization of metastasis
1st	68	67	1	lung
2nd	23	17	6	lymph node, lung, liver
3rd	2	–	2	bone, lung
4th	1	–	1	thyroid remnant
5th	8	4	4	lymph node, lung
6th	1	–	1	lung
7th	1	–	1	liver
8th	4	4	–	–
9th	4	4	–	–
12th	1	–	1	lymph node
Total	113	96 (85%)	17 (15%)	–

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