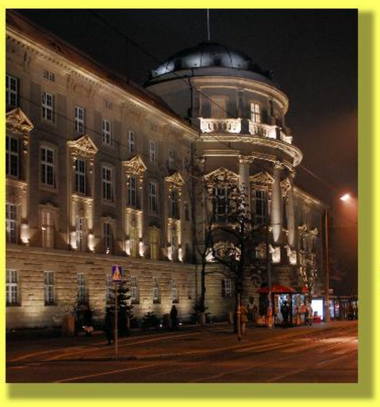

Comparison of the late effects of ablation therapy with single and fractionated dose of radioiodine in patients with differentiated thyroid carcinoma.

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INTRODUCTION

According to a limited number of specialized hospital beds for radioiodine therapy in some countries, a fractionated dose of radioiodine may be considered as the ablation therapy of differentiated thyroid cancer (DTC).

The aim of the study was to compare the late effects of ablation therapy with single and fractionated dose of radioiodine in patients with DTC.

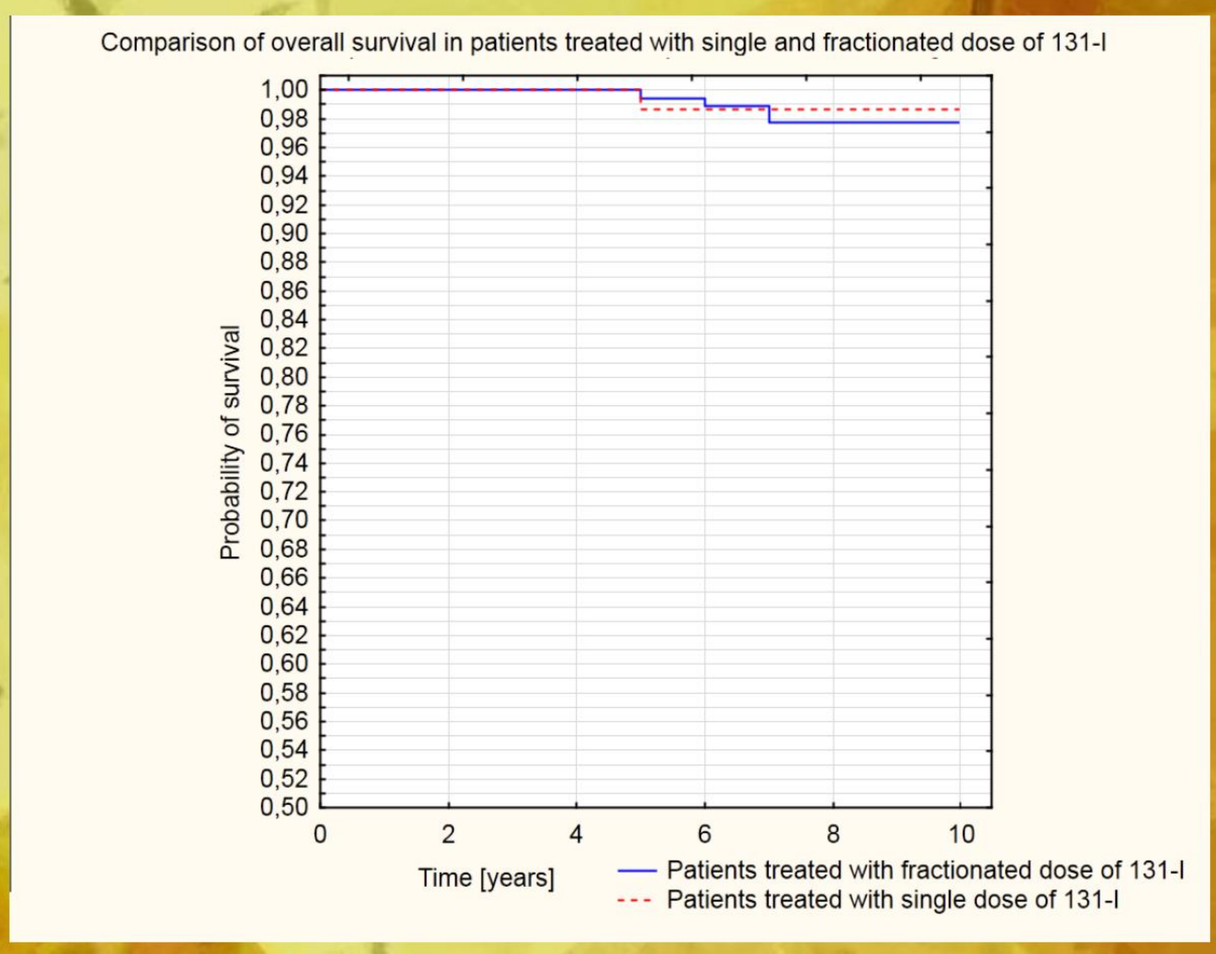
PATIENTS AND METHODS

Patients with DTC referred to our institution 5 – 16 weeks after thyroidectomy, treated with one (131)I dose of 2.2 GBq (60 mCi) or with fractionated dose (1.1 GBq + 1.1 GBq administered in 24 hour intervals) were retrospectively included.

RESULTS

Eighty three patients treated with single dose and 186 patients treated with fractionated dose of radioiodine were included. There were no significant differences between the groups in male to female ratio (88.0 vs. 90.9% of women respectively, p=0.51), age at the time of the first (131)I administration (44.6 vs. 46.8 years respectively, p=0.21), proportion of papillary thyroid cancers (85.5 vs. 84.9% respectively, p=1.0), mean duration of follow-up (8.0 vs. 7.8 years respectively, p=0.68). Also the volume of thyroid tissue in ultrasonography (USV), thyroid-stimulating hormone (TSH) and thyroglobulin (Tg) levels before first (131)I administration did not differ significantly between the groups (p= 0.75, 0.78 and 0.59 respectively). There were no significant differences including the course and outcomes of the treatment between the patients treated initially with single and fractionated dose of radioiodine. Cumulated doses were 7.5 vs. 7.0 GBq (203.2 vs. 189.4 mCi) respectively (p=0.60). Second dose of radioiodine was administered in 55.4% of patients treated initially with single and 54.8% of patients treated with fractionated dose (p=1.0).

The mean number of (131)I administrations during the time of follow-up was 2.0 vs. 2.2 respectively (p=0.77). Also the overall survival did not differ significantly between the groups. Probability of five years overall survival was 98.6% for patients treated with single and 99.5% with fractionated dose of 131-I, 10 years – 98.6 and 97.1% respectively, 15 years – 95.5 and 92.9% respectively (p>0.05).



CONCLUSIONS

Both included groups were comparable as there were no significant differences concerning the demographic structure, mean time of follow-up and evaluated parameters such as Tg and TSH levels or USV before the first (131)I administration. Also the course and outcomes of treatment, expressed by the percentage of patients needing second administration of radioiodine, mean number of administrations and cumulative dose of (131)I and probability of overall survival did not differ significantly. According to our results, treatment with fractionated doses (1.1 GBq + 1.1 GBq) of (131)I administered in 24 hour intervals can be considered as equivalent alternative to the treatment with single dose of 2.2 GBq.

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