(p<0.05). But they were almost(about 82.1%) still in the normal range. And it was still presence in low- and middle-doses group, except high-dose group. Albumin (Alb) was found lower after treatment in high dose group. ② There were no significant difference between pre- and post- treatments in 106 patients (p>0.05).And the outcome was the same in 3 groups way. Conclusion The transaminase of liver may slightly rise by low- and middle-doses I131 treatment, but the fluctuation was in the normal range. The blood urea nitrogen (BUN),serum creatinine (Cr), blood uric acid (UA) may not alter by I131 treatment. So radioiodine therapy for differentiated thyroid cancer was safe and effective without liver and renal disfunction.

PT39

Clinical study of 131I thyroid remnant ablation in 183 post-surgery differentiated thyroid carcinoma cases

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Objective To study the factors that affect the efficacy of the ^{131}I thyroid remnant ablation of post-surgical differentiated thyroid carcinoma patients. Methods A retrospective analysis was performed of 183 post-surgical differentiated thyroid carcinoma patients treated with ^{131}I thyroid remnant ablation. These patients have an average age of 46.86±14.98 years ranging from 7 to 81. One hundred and sixty-five of the patients had papillary cancer and remaining 18 had follicular thyroid cancer. The ^{131}I remnant ablation was done following the guideline of Chinese Association of Nuclear Medicine. About 3 to 6 months later, the efficacy of the ablation was evaluated by the ^{131}I whole body scan. The criterion of the successful ablation was defined as no radioactive uptake in the thyroid bed. The data of age, gender, pathological type, metastasis or not, the size of thyroid remnant, TSH level, rate of iodine uptake, the ablative dose and the efficacy of ablation was recorded. Binary regression and chi-square test was analyzed to study the main factors that affect the efficacy of ablation. Results 1. Successful ablation at first dose was achieved in 109 patients (59.56%). 2. By Binary Logistic Regression the size of thyroid residue and the ablative dose were the main factors that affect the efficacy of the ablation, Wald value was 8.59 and 6.40, p was 0.003 and 0.011 respectively. 3. By chi-square test, the ablation efficacy in patients with TSH>=30uIU/ml was higher than those with TSH<30uIU/ml, x2 was 7.291 and p was 0.007. There was no significant difference between patients with TSH<60uIU/ml and those with TSH>=60uIU/ml, x2 was 0.1511 and p was 0.697. Conclusion The size of thyroid residue and the ablative dose are the main factors that affect the efficacy of radioiodine thyroid ablation. Though the TSH level is not the main factors, TSH still poses important effect on the ablation efficacy.

PT40

Observation of the efficacy of 131I thyroid remnant ablation in differentiated thyroid cancer patients after a partail thyroidectomy

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Objective: To observe the efficacy of ^{131}I thyroid remnant ablation in differentiated thyroid cancer patients with a partial thyroidectomy. Methods: The data of ^{131}I thyroid remnant ablation in 103 cases of post-surgical differentiated thyroid cancer patients was retrospectively reviewed. Among them, Seventy patients had undergone a complete thyroidectomy and the rest 33 patients had a partial thyroidectomy. All patients had a thyroid hormone withdrawal and strict low-iodine diet one month before the ^{131}I thyroid remnant ablation. The first ablative dose was 1.11-3.7GBq(30-150mCi). Diagnostic ^{131}I whole body scan was used to evaluate the efficacy of ablation 3-6 month later. If there was no visible radioactive uptake in the thyroid bed, the ablation was defined to be complete. Otherwise, it was defined to be partial. If the ablation is partial, patients needed second or third dose of ^{131}I to complete the ablation and further follow-up. Results: 1.After the first, second and third ablation, the rate of complete ablation was 61.43%, 88.89% and 100% in the DTC patients who had a complete thyroidectomy; 21.21%, 46.15% and 78.57% in those patients who only had a partial thyroidectomy. 2.The efficacy of the first and second ablation in DTC patients with complete thyroidectomy was compared to that of the second and third ablation in patients with partial thyroidectomy by Chi-square test, p value 0.246 and 0.393 respectively. The difference between these two groups was not significant. Conclusions: Although the efficacy of ^{131}I thyroid remnant ablation in the DTC who had a partial thyroidectomy is not so good as those who had a complete thyroidectomy at the first dose, it can also achieve high rate of complete ablation at the second or third dose of ^{131}I thyroid remnant ablation. There is no need of further surgery before ^{131}I thyroid remnant ablation for those DTC patients whose thyroidectomy is not complete

PT41

Relationship between both TSH serum levels and nodule size, and response to radioactive iodine therapy in patients with toxic adenoma

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Background: ^{131}I-NaI therapy is recommended in almost all patients with toxic adenoma and suppressed TSH levels in order to prevent cardiac and other complications. Aim: To evaluate if serum TSH levels and nodule size at time of ^{131}I-NaI application influence the therapy outcome in hyperthyroid patients with toxic adenoma. Methodology: Therapy response was evaluated in 40 patients, mean age 59.0 years, followed up to 24 months after ^{131}I-NaI application. According to nodule size at time of ^{131}I-NaI therapy, patients were divided into two groups: G 1 – nodule diameter ≤ 20 mm and G 2 - nodule diameter >20 mm. Results: In the whole population, positive therapy response (euthyroidism or hypothyroidism) was registered in 60% of patients (17.5% with hypothyroidism). In the G 1 group there were more patients with positive (85.7% vs. 45.0%) and less with negative therapy response (hyperthyroidism) (14.3% vs. 55.0) than in G 2 group (χ^2=34.8, p<0.01). TSH serum concentrations before radioidine application (0.542±0.595 mu/l vs. 0.141±0.194 mu/l, p<0.05) as well as the incidence of posttherapy hypothyroidism (35.7% vs. 10.0%) were higher in G1 than in G 2 group. Conclusion: Smaller nodules and higher TSH levels at time of ^{131}I-NaI application have great influence on hyperthyroidism elimination. A higher frequency of hypothyroidism in patients with lesser nodules and higher TSH levels supports the recommendation to keep patients slightly toxic at time of radioiodine application to prevent posttherapy hypothyroidism.

PT42

CONCENTRATIONS OF THYROGLOBULINE AND ANTITHYROGLOBULINE AUTOANTIBODIES IN PATIENTS WITH DIFFERENTIATED THYROID CANCER AFTER THERAPY BY RADIOIODINE 131

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The presence of thyroglobuline (Tg) in sera of patients with differentiated thyroid cancer (DTC) after total thyroidectomy indicates the residue of thyroid tissue. Later reappearance, as well as the increase of Tg concentrations in patients with DTC, indicates the presence of thyroid tumor cells. Besides Tg, in some patients with DTC there is also an increase of the concentrations of antithyroglobuline autoantibodies (TgAb). The aim of this study is to analyse the Tg and TgAb concentrations in patients with DTC before, and three or six month after radioiodine therapy, respectively. The study included 41 patients treated by iodine 131 in the Department of nuclear medicine, Clinical Center Kragujevac during two-years period. The Tg and TgAb concentrations were determined by using *Cis-Biointernational* (France) assays. It was shown that there is significant difference ($p<0.001$) between sera concentrations of Tg measured six and three months after radioiodine therapy, respectively. In all 41 patients with DTC after radioiodine therapy sera concentration of Tg was decreased. Besides that, the statistically significant differences between TgAb concentrations six months after the therapy related to TgAb concentrations before therapy ($p<0.001$) and TgAb six months after the therapy related to concentrations three months after therapy ($p<0.001$) were shown, as well as three month after therapy related to concentration before the radioiodine therapy ($p<0.01$). In patients with metastatic DTC disease, in which sera concentrations of Tg were extremely increased (from 222 to 1672 g/L), high concentrations of TgAb were not found. Although the decrease of mean TgAb values in patients without DTC metastases were shown three and six month after radioiodine therapy, respectively, by analysis of individual TgAb values it was shown that after the radioiodine therapy in some patients (20%) TgAb concentrations were decreased, in other patients (11,4%) TgAb concentrations were increased, and in remainder patients (69,6%) unvaried.
In conclusion we could say that in our patients with DTC three and six month after radioiodine treatment sera concentrations of Tg were decreased, while the concentrations of TgAb were decreased, increased or unvaried.

PT43

Influence of Vitamin C on Salivary Absorbed Dose of I-131 in Thyroid Cancer Patients: A Prospective, Randomized, Single-Blind, Controlled Trial

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In this study, vitamin C was administered at various times as a sour stimulant to thyroid cancer patients, and the effect on salivary absorbed dose of therapeutic radioiodine (I-131) was investigated. Methods: Patients with differentiated thyroid cancer who had been prepared for thyroid remnant ablation after total thyroidectomy were prospectively recruited and, using a random number table, were divided into 4 groups. In the hypothyroid condition, the patients in groups A, B, C, and D began sucking vitamin C (100 mg every 4 h in the daytime over 6 d) at 1, 5, 14, and 25 h, respectively, after receiving 3.7 GBq of I-131. Scintigraphic images of the head and neck were serially acquired after I-131 administration to assess biokinetics in the salivary glands. Calculation of salivary absorbed dose was based on the MIRD schema of the Society of Nuclear Medicine. Results: Seventy-two patients (18, 18, 19, and 17 patients from groups A, B, C, and D, respectively) were eligible for the analysis of salivary dosimetry. Differences in absorbed doses to the parotid salivarygland (0.18±0.11, 0.16±0.07, 0.16±0.09, and 0.16±0.12 mGy/MBq in groups A, B, C, and D, respectively; P=0.37) and submandibular salivary gland (0.19±0.05, 0.17±0.05, 0.18±0.07, and 0.17 ±0.06 mGy/MBq, respectively; P=0.28) were not statistically significant among groups. Salivary cumulated activities arising from the first 24 h after I-131 administration accounted for 86.08%±7.89% (range, 75% - 98%) of total cumulated activities. Differences in salivary absorbed dose during the first 24 h were not statistically significant among the 4 groups either (P=0.32 and 0.24, respectively, for the parotid and submandibular salivary glands). Conclusion: Salivary stimulation with vitamin C at any time after I-131 administration has only a limited effect on salivary absorbed dose in thyroid cancer patients. (Statement: The manuscript of the study has been accepted to be published in an upcoming issue of the Journal of Nuclear Medicine.) (Corresponding Author: Anren Kuang. This work was supported by the National Natural Science Fund of China (grants 30670585 and 30870724)

PT44

Lung Absorbed Doses in I-131 Therapy of Thyroid Cancer Patients with Diffuse Pulmonary Metastases

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Objective: The lungs bearing diffuse metastases are the important dose-limiting organ in I-131 therapy for thyroid cancer. The objective of the study was to estimate the absorbed doses to the lungs in I-131 therapy for thyroid cancer patients with diffuse lung metastases. Methods: Ten consecutive thyroid cancer patients with diffuse lung metastases prepared for I-131 therapy were prospectively recruited. Whole body planar quantitative scintigrams were acquired serially after administration of 185 MBq of I-131 and the time-activity curves for I-131 in the lungs and the-remainder-of-body were derived. Assumed that β - electron emissions from I-131 deposited in the lungs were completely absorbed by diffuse metastatic lesions, and Y photon emissions from I-131 deposited in the lungs and the-remainder-of-body irradiated normal lung parenchyma, and based on Medical Internal Radiation Dosimetry formalism of the Society of Nuclear Medicine, the absorbed doses to the lungs was calculated. Results: The median 24-h I-131 uptake in the lungs was 5.0% (1.0% - 37.1%), and the median effective half-times in the lungs and the-remainder-of-body were 33 h (15h - 107h) and 16 h (8 h - 25 h), respectively. The resulting lung absorbed dose ranged from 0.03 mGy/MBq to 1.11 mGy/MBq. Conclusion: Based on the empiric-fixed-activity method, limiting single treatment to 7.4 GBq, severe radiation-induced lung toxicity expected at normal lung absorbed doses of 25 - 27 Gy can be avoided in I-131 therapy for thyroid cancer patients with diffuse lung metastases. While, the risk of lung fibrosis increases with higher cumulative amounts of I-131 given over an extended period.

PT45

Sm-153 EDTMP THERAPY FOR BONE METASTASES: SINGLE AGENT VS. INTEGRATED THERAPY.

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Objectives: To compare the results of bone palliative treatment using Sm-153 EDTMP as a single agent and with those of Sm-153 EDTMP treatment combined with another systemic treatment.
Materials and methods: Group I: 17 patients (10 females and 7 males, mean age 58,1±14,4) with multiple skeletal metastases from either prostatic carcinoma (4), breast carcinoma (8), renal carcinoma (1) or lung carcinoma (4), with mean objective pain score according to 10 score system 8,29±1,1 (max 9, min-6). These patients received Sm-153 EDTMP therapy only (37 MBq/kg body weight). Group II: 10 patients (6 females and 4 males, mean age 55,4±7,8) with bone metastases from prostatic