

2 patients were tumor-free. The examinations were changeless in 20 cases (26%). Progression was found only in 1 patient. Both regression and progression were seen in 7 patients. Changeless hot spots and regression, therefore changeless hot spots and progression together were found in 6-6 cases. In 1 patient progression, regression and changeless hot spots were detected, too. The number of indefinite cases were 21 (27%).

Conclusions: On the base of our results the detection of pathological lesions by SPECT/CT is suitable to follow up and evaluate the effectiveness of the high-dose radioiodine therapy in patients with differentiated thyroid cancer.

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EFFECT OF PATIENT POSITION DURING CARDIAC PROCESSING ON EVALUATION

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Background: Gated myocardial perfusion imaging is a well-established method for defining the risk of coronary artery disease. The images are generally acquired in supine position; however, there are patients who are not able to lie due to their other diseases (skeletal problems, heart failure, claustrophobia etc.). That is the reason why cameras using sitting position have been developed recently. However, the available normal data bases were created from studies acquired in supine or prone position. Our aim was to investigate how the patients' position influences the quantitative results obtained by comparison to a normal cardiac data base.

Material and methods: 58 patients (mean age: 58 ± 10.1 year) without AMI in their medical history were enrolled in our prospective study. Standard stress gated myocardial perfusion imaging with Tc-99m labeled MIBI was performed by two types of gamma camera, using different patient positioning: supine for the Cardio C, and sitting for the CardioDesk (both by Mediso Ltd.). The mean time between the two acquisitions was 32.5 ± 5.26 min. The InterviewXP package was used for reconstruction, and then the Emory Cardiac Toolbox software for quantitative evaluation by three experienced physicians not aware of the anamnestic data. The ejection fraction, end diastolic (EDV) and end systolic (ESV) left ventricular volumes, perfusion defect score (SSS) and total severity score (TSS) were calculated from each study automatically, based on the same normal data base. The results were analyzed using the IBM SPSS v19 statistical package.

Results: The values measured by different physicians could be averaged since they were not statistically different. While there were no significant differences between the ejection fractions obtained by the two positions (paired t-test: $p > 0.1$), the left ventricular volumes calculated from the studies acquired in sitting position were significantly lower (paired t-test, $p < 0.0001$). On the other hand, the severity scores were significantly higher.

Conclusion: Our findings indicate that the parameters obtained in different positions are not comparable. Quantitative analysis of myocardial scintigraphy requires separate data base for each patient position.

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QUANTITATIVE MEASUREMENT OF MYOCARDIAL PERFUSION WITH PET USING 11C-ACETATE

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Background: Our goal was to measure myocardial perfusion of patients with ischaemic heart disease quantitatively using 11C-acetate PET method.

Material and methods: 11 patients with ischaemic heart disease were examined. Myocardial perfusion was measured with 185–550 MBq 11C-acetate iv. injection after pharmacological stress (4 minutes infusion of dipyridamole 0.56 mg/kg). List-mode data acquisition was performed with a Biograph HD 6 PET-CT camera (Siemens) during 330 seconds. CT-based attenuation-corrected frames (2 × 3, 12 × 5, 7 × 10 and 7 × 20 seconds) were constructed. Data quantification was performed with PMOD software, based on a one-compartment model. Regional perfusion was represented on a standard 17 segments myocardial map in ml/min/g.

Results: Our results were compared with the results of invasive coronary angiography (n = 9) or the cardio-CT (n = 3) and with stress-rest 99mTc myocardial SPECT (n = 5). Results of the PET-study corresponded to the results of the other methods. Statistical analysis could not be performed because of the low number of patients. Our results with 11C-acetate were similar to data in the literature (rest and ischaemia: < 2 ml/min/g — stress flow: 2.5–3.8 ml/min/g). Aim of our presentation is to demonstrate a PET method to measure myocardial perfusion quantitatively and to present our preliminary data.

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NEW RESULTS OF NUCLEAR CARDIOLOGY METHODS MONITORING THE CRT-TREATMENT OF PATIENTS WITH HEART FAILURE

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Background: Our aim was to investigate the importance of different nuclear cardiology methods predicting or/and measuring the efficacy of cardiac resynchronization therapy (CRT) in severe heart failure.

Material and methods: In 15 patients (pts) with severe heart failure (HF) — EF < 30%, QRS > 120 ms, in NYHA III–IV clinical stage — several kinds of nuclear cardiology procedures were performed. [In 11 pts ischemic heart disease (IHD), in 4 pts only hypertension was responsible for HF.] 1) Before CRT gated myocardial perfusion scintigraphy (GMPS) was performed in every case to distinguish the viable and necrotic myocardium, to analyze the dynamic systolic wall-thickening and to measure other functional parameters as well (Emory Cardiac Toolbox). 2) Before and 6 months after CRT all 15 pts had a) planar MUGA and b) SPECT MUGA (Interview XP, Cedars Sinai QGS) to analyze the left ventricular (LV) and right ventricular (RV) function, phase angle (phase histogram) and synchrony (S).

Results: GMPS showed small necrosis only in 2 cases (2/15), but intraventricular dyssynchrony, with wide phase angle was detected in every case. According to necrotic myocardium a separate peak appeared on the phase angle. We could detect on planar and SPECT MUGA — before CRT — low LVEF (10–28%) in every case (15/15), in 3/15 cases RVEF was decreased as well (20–38%). Inter and/or intraventricular mechanical dyssynchrony, wide phase angle was de-