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## Abstracts

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showed grade 5-6, with significant overlying inflammation. Follow-up studies showed in two of these patients a final grade of 1 and 4 (49 and 11 days after surgery respectively). In the failed 2 grafts, decreased uptake was observed (grade 5 and 6). SPECT changed the grade in one patient (from 5 to 4) and SPECT/CT in three, from 5 to 6. There was less indeterminate ratings with SPECT/CT than with planar scintigrams and SPECT. For planar scintigrams sensitivity was 56% and 67% for SPECT and SPECT/CT, specificity was 100% for all techniques. The degree of agreement among nuclear physicians was very good (Cohen's kappa 0.88) for this grading method. Conclusions. Three-phase bone scintigraphy is useful to monitor the viability of vascularized bone grafts. SPECT/CT is also recommended. It may contribute to interpretation of the studies and to precise assessment of graft viability (helped by CT bone window), separating the overlying soft tissues with hyperemia in the recent postoperative period from the bone. Graft-cranium uptake grading method is feasible with a very good degree of agreement between physicians. Caution using early scintigraphy decrease uptake results should be taken into account in the absence of complications after surgery, follow-up studies are advisable in these cases.

## P222

### Complex 99mTc-PDA-DTPA for myocardial imaging

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The 123I-labeled fatty acids such as 123I-Iodophenylpentadecanoic acid and 123I-Beta-methyl iodophenylpentadecanoic acid are the agents used clinically for myocardial imaging. Fatty acids are the major source of energy for the normal myocardium. However, under ischemic conditions the myocardial cells switch to glucose metabolism for their energy needs. Fatty acids undergo prolonged metabolic stunning in patients with reversible ischemia, thereby helping in early diagnosis of coronary artery disease in high-risk patients [Anupam Mathur, a Madhava B. Mallia etc // J. Label Compd. Radiopharm 2010, 53 580-585]. High cost and limited availability of cyclotron-produced 123I, makes 99mTc-labeled fatty acids more desirable for the purpose. In diagnosis the dominant radionuclide is 99mTc. It is estimated that it is involved in about 85% of all imaging procedures in

nuclear medicine. The method for preparation of new 99mTc-fatty chemical systems based on modified diethylene triamine pentaacetic acid (DTPA) molecule has been elaborated in this work. The main advantage using DTPA as chelate agent for radioactive label, is the molecule or its derivative ability to form sufficiently stable complexes with different radioactive metals including technetium-99. Moiety of pentadecanoic acid addition gave the ability to prepare modified complex of DTPA. In a labeling procedure, freshly eluted Na<sup>99m</sup>TcO<sub>4</sub> (20mCi) was added to a mixture of cysteine, stannous chloride, PDK-DTPA and ethanol in a vial. On keeping the reaction mixture at 90 °C for 30 min, [99mTc-PDK-DTPA] radiopharmaceutical was formed. Thereafter, the reaction mixture was cooled over ice and characterized by HPLC. The result of dynamic scintigraphic research showed, that after being injected, the substance is actively accumulated into myocardium. Eventually one can say that modified DTPA-molecules are functionally suitable for myocardial imaging. This work was supported by the Russian Federation represented by the Ministry of Education and Science of Russia (project № RFMEFI60414X0071).

## P223

### Quantification of left ventricular function using gated SPECT with two different automated software packages and cardiac MRI

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(Aim) We compared quantification of left ventricular function using gated SPECT with two different automated software packages and cardiac MRI (Material and Methods) Fifty patients with coronary artery disease were examined at rest SPECT and cardiac MRI. Left ventricular end-diastolic volume (EDV), end-systolic volume (ESV) and ejection fraction (LVEF) were obtained by analyzing SPECT data with two different automated software packages: Quantitative Gated SPECT (QGS) and Cardio REPO. (Results) High correlation were noted in cardiac MRI and both two SPECT data in EDV; QGS(r:0.81), Cardio REP(r:0.84), ESV; QGS(r:0.97), Cardio REPO(r:1.12) and LVEF; QGS(r:0.87), Cardio REPO(r:0.84) Cases of smaller ESV than 50ml in MRI, ESV of Cardio REPO showed larger than that of QGS. Cases of larger ESV than 50ml in MRI, ESV of Cardio REPO showed smaller than that of QGS. And cases of smaller LVEF than 60% in MRI, LVEF of Cardio REPO appeared larger than that of QGS and larger than 60%, LVEF of Cardio REPO smaller than that of QGS. (Conclusions) It may be useful to take this information