2025

ASSESSMENT OF MYOCARDIAL VIABILITY BY I-123 IPPA SPECT IMAGING - COMPARISON TO REST THALLIUM IMAGING. Heo J., Iskandrian AS. The Philadelphia Heart Institute, Presbyterian Medical Center, Philadelphia, PA, USA.

This study examined the ability of I-123 IPPA tomographic SPECT imaging to detect myocardial viability in patients with left ventricular dysfunction due to coronary artery disease. The segmental uptake in IPPA images was compared to rest redistribution thallium images using 20 segments per study. Although there was agreement between IPPA and rest thallium for the presence and nature of perfusion abnormality, more reversible IPPA defects were noted. The number of reversible IPPA defects was greater in patients with LVEF improvement after surgery than in patients without such improvement. Thus, IPPA imaging is a promising new technique for viability assessment.

2026

Stress/Rest ^{99m}Tc-MIBI myocardial SPECT in comparison with Rest/Stress ^{82}Rb PET

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We compared stress/rest myocardial ^{99m}Tc-MIBI tomographic image findings with rest/stress ^{82}Rb ones in 23 patients and 6 normal subjects who underwent both studies simultaneously. Rest/stress Rubidium PET flow studies disclosed ischemia more often than stress/rest ^{99m}Tc-MIBI studies. Rest after stress ^{99m}Tc-MIBI study overestimates perfusion defect.

2027

Evaluation of the result of CABG by analysis of pre and postoperative Tc-99m Myocardial SPECT.

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In 17 patients who have had CABG and Tc-99m Myocardial SPECT pre and post CABG, the score of myocardial segments in each three coronary vascular territories improved after CABG, especially in LAD and RCA significantly (Sign test, $P<0.01$). The severe persistent perfusion defect, previously believed as INFARCT, has experienced complete or partial improvement in 53.8%. After CABG, coronary blood flow was improved significantly and viable myocardium can be rescued in the so-called INFARCT area.

2028

Myocardial perfusion study: comparison between thallium-201 and technetium-99m MIBI singlephoton emission computed tomography

Ratanamart V, Mahanonda N, Pleehachinda R, Buranapong P, (Mahidol Univ. Siriraj Hosp. Bangkok, Thailand)

Myocardial perfusion studies using Tl-201 and Tc-99m MIBI with exercise treadmill tests were performed in 14 patients and 5 normal subjects. Myocardial uptake abnormalities in the two studies were compared to determine differences in severity and extent of perfusion defects, viable myocardium detection and degree of reversibility. Coronary angiography was compared to determine sensitivity and specificity of the tests in detecting coronary artery disease and in localization of abnormal vessels. From this study we have found that both radionuclide studies give comparable results with high sensitivity and specificity. In the place where Tl-201 is not readily available, Tc-99m MIBI could be recommended as a good alternative.

2029

I-131 dispenser for the treatment of thyrotoxicosis: a semi-closed therapeutic system

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Approximately 300 patients are treated in a year for thyrotoxicosis in Siriraj Hospital using I-131 solution. Conventionally 3,700 MBq of conc. I-131 solution is diluted on Monday into a 37 MBq/ml stock of treatment dose. A dispensing table indicating number of ml(s) per every 37 MBq upto 370 MBq is drawn for Monday to Friday taking account of the physical decay of I-131. Treatment technician would dispense the so indicated ml(s) corresponding to the prescribed MBq on a definite day. To reduce radiation exposure to the technician's hand and to avoid volatilization of radioiodine, a semi-closed therapeutic system was locally devised to enable remote manipulation. Mixing and dispensing of the dose are done via appropriate valves and measuring devices using pressurized means. Maximum error of the individual measured dose (n=30) with respect to the calculated activity was found to be 11 per cent. The system has proved to be useful for our routine treatment service.

2030

Safety of Nuclear Medicine Procedures

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From the perspective of the patient and many nursing and medical staff the use of radioactivity is percieved to result in greater radiation doses than from X-ray techniques. There is therefore, a need to provide information to reassure patients of the safety of nuclear medicine procedures.

Recent data produced by the U K National Radiological Protection Board have shown effective doses of between 0.01 - 4.6mSv for conventional X-ray procedures and 2.0 - 8.0mSv for X-ray CT examinations. Published data for common nuclear medicine imaging procedures using Tc-99m range from 0.3 to 5mSv. Tl-201 myocardial perfusion studies result in the highest effective dose from a routine procedure. It is therefore evident that the majority of nuclear medicine procedures result in comparable or lower radiation doses than those from X-ray procedures. With the increasing expectations of modern medical practice and to promote the role of nuclear medicine, it is important to convey this information, in an easily understood manner thus providing appropriate reassurance.