

PERFUSION SCINTIGRAPHY IN DIAGNOSIS OF CULPRIT LESIONS IN PATIENTS UNDERGOING ELECTIVE PTCA

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The coronary angiography provides information on the anatomical state of the coronary tree and, specifically, on the large epicardial arteries, while perfusion SPET facilitates the evaluation of the grade of ischaemia that a particular stenosis produces. Myocardial perfusion scintigraphy is of considerable use in the procedural indications of partial revascularisation in patients with chronic coronary artery disease (CAD). In these cases the purpose is to detect the coronary stenosis that provokes the ischaemia what is termed the "culprit lesion".

THE AIM OF THIS STUDY was to evaluate the accuracy of 1- day DypEx-Rest ^{99m}Tc-tetrofosmin tomography in the identification and localization culprit lesion in the patients with known coronary artery disease.

METHODS: The forty-two patients with known CAD were studied. In all of them angiographically significant coronary narrowing ($\geq 75\%$ luminal stenosis) was detected. All patients were submitted to 2 iv. injections of ^{99m}Tc-tetrofosmin, one in a peak exercise (370 MBq) and the other (740 MBq) at rest 3 h after exercise (images 15-30 min after injection for both studies). In each patient, scintigraphic studies were analyzed by modified Stirner program with standardized myocardial segmentation and nomenclature for tomographic imaging of the heart. Quantification of the regional tetrofosmin uptake was performed using short-axis myocardial tomogram that were divided on 17-segments for each study. A 5-point scoring system was used to assess difference between uptake degree in stress and rest studies for the same segments (1-normal, 2-mild ischaemia, 3-moderate ischaemia, 4- reversibility and 5- severe reversibility). *Summary scor* ≥ 3 was determinate culprit lesion. Also, two of segments with summary scor 5 (*index of summary scor*) in the vascular territory of stenoses coronary artery was determinate culprit lesion.

RESULTS: A total of 126 vascular territories (714 segments) were analyzed before elective percutaneous coronary intervention (ePCI). Overall sensitivity, specificity, and accuracy using *summary scor* ≥ 3 were 82,4%, 93,3%, 84,4%, with positive predictive value 97,7%. Overall sensitivity, specificity, and accuracy using *index summary scor* were 86,3%, 100%, 89,4%, with positive predictive value 100%.

CONCLUSION: 1- day DypEx-Rest ^{99m}Tc-tetrofosmin tomography significantly improves sensitivity, specificity, and accuracy for determination culprit lesion in patients undergoing ePCI.