

# MYOCARDIAL PERFUSION SCINTIGRAPHY – AN EVALUATION OF 1121 PATIENTS EXAMINED AT UNIVERSITY HOSPITAL NORTH NORWAY

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**Aim:** Myocardial perfusion scintigraphy (MPS) is the only widely available method of direct assessment of myocardial perfusion. MPS is recommended as the initial test in people presenting with stable chest pain who have restricted exercise tolerance and should be used as a “gatekeeper” over percutaneous coronary angiography (PCA). At University Hospital North Norway 39% of PCA have non-significant stenosis. We believe that some of these patients could have been selected out of PCA if MPS had been performed. Based on the high number of non-significant stenosis in PCA we wanted to evaluate MPS performed at our hospital and compare MPS and PCA results.

**Materials and methods:** We studied 1121 patients who underwent MPS at Section of Nuclear Medicine, University Hospital North Norway (Tromsø, Norway) between June 2000 and October 2007. Each MPS involved intravenous injection of small amounts of a radioactive tracer (<sup>99m</sup>Tc-labelled Tetrofosmin) at rest (250 MBq) and at peak stress (925 MBq), followed by imaging of the heart with a gamma camera. Homogenous myocardial uptake of tracer indicates normal perfusion, hence the absence of a significant coronary stenosis. Defect in the stress images that normalizes in the rest images (a reversible defect) indicates an inducible perfusion abnormality and normally corresponds to a functionally significant coronary stenosis responding in ischemia. Defect in both stress and rest images (a fixed defect) typically indicate an area of infarction.

**Results:** Table 1 provides clinical characteristics of the overall population. A prior history of acute myocardial infarction (AMI), percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG) was seen in 33% of the patients. Only 15% of the patients had ST depression or bundle branch block (BBB) in stress ECG. The MPS resulted in pathological findings in 303 patients (27%), and the distribution of the perfusion defects are listed in table 2. From these data and with anamnestic information 160 patients (14%) were referred to PCA.

	Number	%
Male	555	49,5
Female	566	50,5
Prev. AMI	158	14
Prev. PCA	130	12
Prev. CABG	73	7
Hypertensive	294	27
Angina P.	264	24
Adipositas	166	15
Digitalis	8	1
Beta-blocker	549	50
ACE-blocker	142	13
Stress ECG		
- no changes	842	83
- ST depr.	130	13
- BBB	23	2

	No ischemia		Ischemia		No infarction		Infarction	
	Number	%	Number	%	Number	%	Number	%
Septal	254	84	49	17	261	86	42	14
Anterior	241	80	62	21	180	59	123	40
Lateral	285	94	18	6	275	91	28	9
Inferior	285	94	18	6	183	60	120	39
Apical	288	95	15	5	277	91	26	8

**Conclusion:** In our preliminary study 14% of the MPS examined patients were referred to PCA. Further studies will be performed to compare angiographic results to MPS both in populations not referred and referred to PCA by MPS examination.