

[Back](#)

HELLENIC JOURNAL OF NUCLEAR MEDICINE  
The Journal of the Hellenic Society of Nuclear Medicine

Hell J Nucl Med 2004, (7) 2: 127-130

**Prediction of the left ventricular ejection fraction using cavity-to-myocardium count ratio and perfusion scores in myocardial perfusion SPECT**

*Dabbagh Kakhki<sup>1</sup>, S.R.Zakavi<sup>1</sup>, H.Jabari<sup>2</sup>*

*1. Department of Nuclear Medicine, Emam Reza Hospital, Mashad University of Medical Sciences, Mashhad, Iran*

*2. Department of Statistics, Emam Reza Hospital, Mashad University of Medical Sciences, Mashhad, Iran*

**Abstract**

Good correlation was reported between left ventricular cavity to myocardial count ratio (LVCMR) and left ventricular ejection fraction (LVEF). The aim of this study was to find a model to predict LVEF from LVCMR and perfusion indices. We studied 77 patients (44 males, 33 females) aged 30-70 years, mean age 52.7 years, who underwent <sup>99m</sup>Tc-MIBI myocardial perfusion SPECT and cardiac catheterization in a short time interval. The LVCMR was obtained in the mid short-axis slice on both stress (with dipyridamole) and rest images using an 8 pixels circle ROI in the LV cavity and the same ROI on the hottest area of myocardium. The 17-segment, 5-point scoring system was used as a semiquantitative global index for overall assessment of extent and severity of perfusion abnormality. Our study showed a significant correlation between angiographic LVEF and stress LVCMR ( $P < 0.001$ ,  $r = 0.612$ ) or rest LVCMR ( $P < 0.001$ ,  $r = 0.671$ ). There was significant correlation between LVEF or LVCMR and summed stress or rest score (SSS or SRS). Using regression analysis for prediction of LVEF, the best model was achieved using SRS and rest LVCMR [ $Y = 46.70 + (1.13 \times \text{Rest LVCMR}) - 0.59\text{SRS}$ ]. In conclusion our study showed that LVEF can be easily estimated using a combination of rest LVCMR and summed rest score.

**Keywords:** <sup>99m</sup>Tc- sestamibi – Left ventricular function – Left ventricular ejection fraction – Cavity-to-myocardium count ratio – Single photon emission computed tomography

**Correspondence address**

Dr.S.R.Zakavi,

Nuclear medicine department, Emam Reza Hospital, Ebn sina Street, Mashad, Iran, Tel: +98-511-8599359, Fax: +98-511-8593038, E-mail: ZAKAVI@mums.ac.ir

[Back](#)