

## Clinical Predictors and Prognostic Value of Tl-201 SPECT Myocardial Perfusion Imaging in Octogenarian Patients Without a Previous History of CAD

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**Background:** Myocardial perfusion imaging (MPI) is routinely used in octogenarian pts for the diagnosis of coronary artery disease (CAD) although the value of this non-invasive test has not been well established in this aged-group pts. The aim of this study was to identify the clinical predictors of stress induced abnormal MPI (AMPI) and to evaluate the prognostic and risk stratification value of AMPI in this group of pts. without a previous history of CAD.

**Methods:** The study population included 339 pts,  $\geq 80$  years old (mean age=  $83.3 \pm 2.7$ ) who were referred to stress Tl-201 SPECT MPI for the diagnosis of CAD. Semi quantitative visual analysis was performed using a 17 segment and a 5 point scoring scale ( 0= normal to 4= no uptake). Cardiac death and non-fatal myocardial infarction were considered cardiac events (CE) during a follow-up period of at least 3 years.

**Results:** An AMPI was present in 154 pts (45.4%). The incidence of AMPI was significantly higher in males in comparison with females (57% vs 37%,  $p < 0.0003$ ) and in diabetics (57% vs 43%,  $p = 0.038$ ). Anginal syndrome and pulmonary edema were more frequently in those with AMPI than with a normal MPI (49% vs 30%,  $p = 0.0005$ ) and (6% vs 1%,  $p = 0.0072$ ), respectively. In contrast to non-anginal chest pain more frequently reported with normal MPI (30% vs 19%,  $p = 0.016$ ). AMPI was present in 53% of pts with an abnormal resting ECG in contrast to 36% of with a normal ECG ( $p = 0.0017$ ). Based on multivariate analysis the best predictive model of an AMPI (Chi-Square 44.8,  $p < 0.0001$ ) included the following independent variables: male gender, Diabetes, anginal syndrome, pulmonary edema and resting ECG. CE were recorded in 18 (8.8%) of the 204 pts that met the follow up criteria. On multivariate regression analysis age and MPI were the only significant predictive variables of CE ( $p = 0.0026$  and  $p = 0.0006$ , respectively). Patients that developed CE were significant older ( $83.1 \pm 2.8$  vs  $84.7 \pm 2.9$  years,  $p = 0.0083$ ). The incidence of CE was significantly higher in pts with AMPI than in those with a normal MPI (15.9% vs 3.5%,  $p = 0.0019$ ), moreover those pts with a SSS  $> 10$  have a higher incidence of CE in comparison to those with a SSS  $< 10$  (29% vs 4.1,  $p < 0.0001$ ) resulting in an odds ratio of 7.6,  $p = 0.0002$ .

**Conclusion:** In octogenarian pts without a previous history of CAD, male gender, Diabetes, anginal syndrome, pulmonary edema and resting ECG are clinical predictors of an abnormal MPI. Tl-201 SPECT MPI has a significant predictive value for the development of CE and yield in the risk stratification of octogenarian pts.