

## **Gated SPECT Evaluation of Post-Ischemic Stunning in Patients who Underwent Coronary Angiography**

*Gorenberg, Miguel<sup>1</sup>; Radan, Lea<sup>2</sup>; Nabil, Mahul<sup>2</sup>; Rosenschein, Uri<sup>1</sup>*

*<sup>1</sup>Bnai Zion Medical Center, Rappaport Faculty of Medicine, Technion-Israel In, Haifa, Israel;*

*<sup>2</sup>Bnai Zion Medical Center, Haifa, Israel*

Background: Postischemic left ventricular (LV) dysfunction on stress-gated Tc99m Sestamibi single photon emission computed tomography (GSPECT) imaging is attributed widely to myocardial stunning (MS).

Methods: We studied 62 consecutive patients (36 were men, mean age  $58.6 \pm 11.4$  (31-78 years) who underwent same day stress/rest GSPECT and CAG performed within 6 month ( $2.1 \pm 1$  months) with no intervening coronary event or revascularization procedure. Perfusion was analyzed using 20 segments scored on a 5-point scale (0 = normal, 4 = no uptake. Summed difference scores (SDS), ejection fraction (EF) were determined by Cedars Sinai Quantitative Gated SPECT (QGS) software.

Results: GSPECT studies showed that myocardial perfusion was normal in 4 patients (6%) and abnormal in 58 (94%). Mild induced ischemia ( $SDS > 3$ ) was present in 10 patients (16%). Twenty-Four (39%) had moderate stress induced ischemia and 24 patients (39%) had severe stress induced ischemia. The mean SDS was  $6.9 \pm 4$ , (range 0-19).

In 24/58(41%) patients with reversible perfusion defects, post-stress LVEF was  $> 5\%$  lower than that rest (Group A: stunned), whereas in the remaining 34 (59%) patients, post-stress LVEF was either  $< 5\%$  or greater than that at rest (Group B: non-stunned). The stunned group showed a significant higher SDS ( $9.5 \pm 4.7$ ) than the non-stunned group ( $5.2 \pm 3.5$ ) ( $p < 0.001$ ). Stunning was significantly more frequent in patients who underwent physical stress 17/31(55%) than in the pharmacological stress group 7/31 (23%) ( $p = 0.009$ ). SDS was significantly higher in multivessel disease at CAG ( $6.5 \pm 3.6$ ) compared to one vessel disease ( $4 \pm 5.7$ )  $p < 0.05$ .

Conclusions: Post-stress stunned coronary artery disease patients were found to have a significant higher SDS than the non-stunned group. These findings were found to be more frequent after physical stress than pharmacological stress.