

## **A Novel Method to Reduce the Acquisition Time of Myocardial Perfusion SPECT Scan: a Comparative Study**

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**Purpose:** A novel algorithm of image processing “ Evolution for cardiac”( EFC), enables to reduce the time scan of gated SPECT myocardial perfusion imaging (MPI) up to half of the standard time scan. Validation of gated SPECT and clinical results of the reduced time algorithm compared to the standard full time protocol was investigated.

**Methods:** The reduced time algorithm was processed on 97 SPECT MPI studies. Included patients who referred for stress MPI with clinical relevance of CAD and BMI < 30 Kg/m<sup>2</sup>. The patients were scanned twice and sequentially by full time acquisition for gated SPECT (17.17 min for low dose (8-10 mci) and 14.52 min for high dose( 25-30 mci) of Tc 99m sestamibi) and by reduced time acquisition ( 8.4 min and 7.10 min respectively ). The processing was done blindly by Myovation software using OSEM for the standard scan and by EFC for reduced time acquisition.

**Results:** Patient mean age was 61± 14 (26% women). In the 50 patients, analyzed by Bland Altman model, the differences of the summed stress scores (SSS) in full time SPECT compared to reduced time SPECT were between + 3.6 and – 3.5 and in the summed rest scores (SRS) between +2.4 and –2.7. There were also highly significant correlation of rest and stress LVEF (r=0.97, r=95 p<0.0001 respectively) between full time and reduced time scans. The clinical diagnosis of normal, ischemia or scar was identical in 47 from 50 patients.

**Conclusions:** Reduced time scan for gated SPECT has demonstrated comparable results to full time scan and can replace the full time acquisition in patients with BMI under 30, using one-day protocol stress-rest as well as rest- stress sequence.