Abstract Information

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Title:	Wide Beam Reconstruction Technology - Does It Respect Myocardial Perfusion SPECT Functional Parameters?
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Abstract Content **100%**

Aim:
Wide Beam Reconstruction (WBR™) technology (UltraSPECT, Israel) is a resolution recovery method, designed to simultaneously suppress noise and improve image resolution and is optimised specifically for short gated cardiac stress perfusion scans without applying any post-filter.
The aim of our study was to compare the quantitative myocardial perfusion(MP) SPECT functional parameters based on the image obtained by this new methodology with the values obtained through our usual protocol.
Material & Methods:
95 patients were randomly selected: 25 women and 70 men, 62±11 years old and weight: 75±12 kg. 49 had history of AMI.
After pharmacological stress, patients went through a double stress MP SPECT scan, on the same occasion and gamma camera.
The first acquisition used 30 views, 40 sec/view (2 detectors at 90º). Images were reconstructed by filtered back projection(FBP). The second protocol used 60 views, 10 sec/view. Images were treated by WBR.
The 190 acquired studies were processed by the same operator with Cedars-Sinai software. LVEF, EDV, ESV, SMS and STS were determined. Paired Student t test and correlation coefficient(CC) was calculated.
Results:
The sample size of 190 studies presents a statistical power of 0.96 (for an effect size of 0.5 and an alpha-level of 0.05).
Results: see table below. LVEF and volumes of the two paired groups show no statistically significant difference (SSD) and a very strong correlation.
Summed scores show a SSD in Student t test, but with a strong CC.
Conclusion:
The very good results obtained confirm that this new technology with half of the scan time doesn't influence the main functional parameters obtained in MP SPECT scans (LVEF and volumes). Motion and thickening scores are strongly correlated, with no interference in interpretation. We feel confident continuing to use WBR for MP SPECT scans, as a strong tool that allows shorter procedures, with no compromise on cardiac functional parameters.

Statistics Results

	t-test	CC
LVEF	< 0.05	0.96
EDV	<0.005	0.97
ESV	<0.005	0.98
SMS	0.14	0.96
STS	0.98	0.94