

Abstract Information

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Abstract Content

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Introduction: The Wide Beam Reconstruction(WBR™) technology (UltraSPECT, Ltd) is an iterative reconstruction method for resolution recovery. It is based on an accurate modelling of the emission - detection process, including the collimator geometry and the detector distance to the patient. This optimisation is designed to improve image resolution without enhancing noise and optimised specifically for short cardiac perfusion scans.

Aim: To compare the conventional acquisition and Filtered back projection(FBP) with a shorter acquisition and WBR, in terms of perfusion diagnostic results and image quality.

Material & Methods: We evaluated 95 patients(pts), 26□and 69□, mean age 62±11, 40 with previous myocardial infarction(AMI). Pts performed two sets of acquisitions in dual head gamma camera. Conventional protocol (FBP): 40 sec/view, 30 views followed by the new method (WBR): 10 sec/view, 60 views.

Quantification from Cedars-Sinai for scores system was used. Two independent observers(O) classified the images quality: very good(VG), good(G) and sufficient(S). Reports of the two sets of studies were also done independently and blindly.

Paired Student t test(TT) and coefficient correlation(CC) between FBP and WBR were calculated for scores analysis, consideration all the pts and separately pts with body mass index > 25 and AMI pts.

Results: Image quality : In WBR, >70% studies were VG, none S. In FBP, 51% G, 28% S. The agreement inter O increased in 13% when using WBR.

Final report : Intra-O concordance was 93% and 88%. The inter-O discordance was 17%(FBP) and 15%(WBR). 90% of the discordances were in ischaemic lesions with <5% of the LV area.

Score analysis – see table.

Conclusions: There is a good correlation and concordance FBP/WBR in perfusion analysis.

The inter-O discordance is persistent, not dependent on the method, but of the pts characteristics.

The weak correlation of the scores system adds to the difficulty of detecting viability or small ischaemic areas in AMI pts, independently of the method.

However, the WBR increased in 2%, the inter-O concordance in the final report.

Scores Statistical Analysis

	All Pts n=95	All Pts	Fat Pts n=56	Fat Pts	AMI Pts n=40	AMI Pts
	TT	CC	TT	CC	TT	CC
SSS	<0.005	97%	<0.05	96%	<0.05	94%
SDS	NS	62%	NS	61%	NS	55%