

POSTER PRESENTATION

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Usefulness of semi-quantification of ischemic myocardium after adenosine stress magnetic resonance

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Background

Adenosine stress MR shows high sensitivity and intermediate-to-high specificity; therefore, there is a number of false positive patients that is referred to useless coronary angiography studies after a positive adenosine stress MR. We sought to verify whether the (semi) quantification of the amount of ischemic myocardium can improve the management of patients after a positive adenosine stress MR study. According to previous nuclear medicine evidence, we defined a 10% LV mass cut-off for the diagnosis of clinically relevant ischemia.

Methods

80 MR studies were classified as positive or negative according to the presence or absence of a reversible perfusion defect ("old approach"). We re-analyzed the perfusion studies dividing each one of the 16 AHA segment of the 3 perfusion slices in 2 similar sub-segments (subepicardial and subendocardial): each one of the resulting 32 segment represent about 3% of the myocardial mass. We re-defined ("new approach") as ischemic the patients with > 3 sub-segments (>10% of LV mass) with reversible lesions, and as non-ischemic the patients with 3 or less positive sub-segments. Patients were classified as affected by clinically relevant ischemia if the post-adenosine MR coronary angiography confirmed coronary lesions > 50%, and non-affected if the angio was negative and/or no MACE were observed after a > 6 months follow-up.

Results

Mean age 60.7 years old. Mean follow-up = 18 months (5-37). Pre-test prevalence of CHD: 64%. Prevalence of

clinically relevant ischemia = 17.5%. With the old approach we obtained a sensitivity and specificity of 92.9% and 72.7 respectively. With the new approach we obtained a sensitivity and specificity of 85.7% and 90.9% respectively. Global accuracy of the stress MR exam increased from 76.2 to 90%.

Conclusions

A visual semi-quantification of the ischemic myocardium improves patient management after a positive adenosine stress MR study.

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