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Imaging

EFFECT OF CARDIAC HYBRID 150-WATER PET/CT IMAGING UPON DOWNSTREAM REFERRAL FOR INVASIVE CORONARY ANGIOGRAPHY AND REVASCULARIZATION RATE

Poster Contributions

Poster Sessions, Expo North

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Background: Hybrid positron emission tomography (PET)/CT coronary angiography (CTCA) imaging provides complementary information on coronary anatomy and myocardial perfusion and may result in better personalized treatment strategy of coronary artery disease (CAD). This study evaluates the impact of hybrid imaging upon referral for invasive coronary angiography (ICA) and revascularization rates

Methods: A total of 375 patients (mean age 58 ± 10 years, 192 men) without a previous history of CAD underwent hybrid 150-water PET/CTCA imaging for evaluation of CAD. Downstream treatment strategy within a 60-day period after hybrid PET/CTCA imaging for ICA referral and revascularization was assessed. CTCA examinations were classified as showing no (obstructive) CAD ($< 50\%$ luminal narrowing), equivocal (borderline test result) or obstructive CAD ($\geq 50\%$), while the PET perfusion images were classified into normal or abnormal.

Results: On the basis of CTCA imaging, 182 (49%) patients displayed no (obstructive) CAD. Only 10 (5%) patients that showed no (obstructive) CAD on CTCA were referred for ICA, which were all negative. An equivocal CT study was noted in 80 (21%) patients, with 56 (70%) having normal MPI, resulting in referral rates for ICA of 18% (normal MPI) and 71% (abnormal MPI), respectively. No revascularizations were performed in the presence of an equivocal CT and normal MPI, while 59% of those with abnormal MPI were revascularized. CTCA identified obstructive CAD in 113 (30%) patients accompanied in 59 (52%) patients with abnormal MPI. Referral rate for ICA was 57% for normal MPI and 88% in the group with abnormal MPI, resulting in revascularization rates of 26% and 72%, respectively.

Conclusion: Hybrid 150-water PET/CTCA imaging impacts clinical decision making with regard to referral for ICA and revascularization procedures. Particularly, in the presence of an equivocal or abnormal CTCA, MPI could guide in the decision to refer for ICA and revascularization.