機能的画像検査の広範な使用が推奨される (Abstract 4154)

CE-MARC 2：冠動脈疾患が疑われる患者において心臓MRIはより侵襲的な冠動脈造影を回避させる

CE-MARC 2: Cardiac MRI avoids more invasive angiography in suspected coronary artery disease

冠動脈疾患が疑われる患者を対象とした機能的画像検査-ガイドラインが指示する方法ではなく-を用いた初回研究の結果、不必要な血管造影が減少した、とのCE-MARC 2トライアルの結果が2016年ESC Congressで発表され、同時に*JAMA* に掲載された。心臓MRIおよび心筋シンチグラフィの両者は、ガイドラインが指示する方法よりも不必要な冠動脈造影施行率を有意に減少させ、主要な心血管イベントに関して不利益はなかった。この結果から、たとえ高リスク患者群であっても、機能的画像検査をより広範囲に活用すべきであることが示唆された。

Full Text

Initial investigation of patients with suspected coronary heart disease (CHD) using functional imaging - rather than guideline-directed care - resulted in significantly less unnecessary angiography, according to results of the CE-MARC 2 trial.

The findings, presented in a Hot Line session at ESC Congress 2016, and published simultaneously in *JAMA*, could have an important impact on referral rates for invasive coronary angiography, and potentially healthcare costs, said lead investigator John Greenwood, PhD, from the University of Leeds, in Leeds, United Kingdom.

"Rates of invasive angiography are considered too high among patients with suspected coronary heart disease," explained Professor Greenwood.

"Our findings show that both cardiovascular magnetic resonance (CMR) and myocardial perfusion scintigraphy (MPS) significantly reduced rates of unnecessary angiography compared to guideline-directed care, with no penalty in terms of major adverse cardiovascular events (MACE). This suggests that functional imaging should be adopted on a wider basis, even in high-risk patient subgroups."

The Clinical Evaluation of Magnetic Resonance Imaging in Coronary Heart Disease 2 (CE-MARC 2) trial included 1,202 patients with suspected CHD from six UK centers.

The patients were randomized to functional imaging-based investigation with either CMR (n = 481) or MPS (n = 481), or to guideline-directed investigation (n=240) based on National Institute for Health and Care Excellence (NICE) guidelines.

In this latter group, those with a pre-test likelihood of 10%-29% (meaning low risk for CHD based on age, gender, symptom characteristics, and clinical history) were scheduled for cardiac computed tomography (CCT), those with a pre-test likelihood of 30% to 60% (intermediate risk) were scheduled MPS, and those with a high pre-test likelihood were sent directly to coronary angiography.

The primary end point was unnecessary coronary angiography within 12 months, (defined by absence of significant stenosis measured by fractional flow reserve or quantitative coronary angiography), with secondary end points of MACE, and positive angiography within this same time period.

Overall, 22% of the study population underwent coronary angiography within 12 months, with unnecessary angiograms occurring in 28.8% of the NICE guidelines group, 7.5% of the CMR group, and 7.1% of the MPS group, reported Professor Greenwood.

The adjusted odds ratio of unnecessary angiography for the CMR group versus the NICE guidelines group was 0.21 (95% CI, 0.12-0.34; P < .001), with no statistically significant difference between the CMR and MPS groups.

Between the three strategies, there was no difference in short-term MACE or positive angiography rates.

"Worldwide, MPS is the most commonly used test to assess suspected CHD, but CMR is increasingly recognized as having high diagnostic accuracy and prognostic value," noted Professor Greenwood. "Although the results of CE-MARC 2 showed no difference between the CMR and MPS strategies in terms of unnecessary angiography rates, our original CE-MARC study showed that CMR had a higher diagnostic accuracy compared to MPS (Lancet 2012; 379(9814):453-460) and was also a stronger predictor of risk for MACE (Annals of Internal Medicine 2016; 165(1):1-9)."

He concluded that "these results show that a broader use of functional imaging (CMR or MPS), in low, intermediate and high risk patient groups, could reduce the rates of invasive angiography that ultimately show no obstructive coronary disease. In addition, CE-MARC and CE-MARC 2 further support the role of CMR as an alternative to MPS for the diagnosis and management of patients with suspected CHD."

The trial was funded by grants and fellowships from the British Heart Foundation; the Leeds Teaching Hospital Charitable Foundation; the National Institute for Health Research, and the Scottish Funding Council. Professor Greenwood reported no relevant disclosures.

Conference News