冠動脈CT造影は診断を向上させる (Abstract 402-14)

SCOT-HEART：冠動脈CT造影はより優れたケア計画を促進し後の心筋梗塞リスクを軽減する可能性がある

SCOT-HEART: CT angiography promotes better care planning and may reduce risk for future myocardial infarction

冠動脈CT造影（CTA）の使用と標準的な治療を組み合わせることにより胸痛で来院した患者を医師がより正確に診断でき、より適切な追跡検査や治療につながるとの研究結果が第64回American College of Cardiology年次集会で発表され、*Lancet*に掲載された。冠動脈疾患（CAD）が疑われる胸痛により来院した計4,146人の患者がスタディの対象となった。CAD、CADによる狭心症疑い、または心疾患ではないとの初回診断の後、4,146人の患者全員が標準治療のみまたはCTAを組み合わせて施行される群に等しくランダムに割り付けられた。CTA群の25%がこの検査後に異なる診断を下されたのに対し、標準ケア群におけるその割合はわずか1%であった。その後の検査計画はCTA群の15%で変更になったのに対し、コントロール群におけるその割合はわずか1%であった。CTAを受けた患者の約23%が新たな診断に応じて治療が変更されたのに対し、コントロール群においてはわずか5%変更されたのみであった。CTA群における心筋梗塞発現率は低い傾向にあった。

Full Text

Use of computed tomography coronary angiography (CTA), coupled with standard care allows doctors to more accurately diagnose coronary artery disease in patients presenting with chest pain, therefore, leading to more appropriate follow-up testing and treatments, according to research presented at the American College of Cardiology's 64th Annual Scientific Session. Data also showed a trend toward a lower incidence of heart attacks among the group receiving CTA compared to usual care.

Many people presenting with angina end up suffering a cardiac event within a couple of years and need timely intervention. At the same time, misdiagnoses of non-cardiac chest pain also leave one-third of patients vulnerable to subsequent death from cardiovascular disease, so methods to improve the initial diagnoses and treatments are critical, the authors said.

A total of 4,146 patients at 12 cardiology centers across Scotland who presented to the clinic with chest pain due to suspected coronary artery disease were included in the study. Forty-seven percent were given an initial diagnosis of coronary artery disease using standard protocols and 36 percent were given an initial diagnosis of suspected angina due to coronary artery disease. The remainder were not diagnosed with heart disease and likely had conditions such as indigestion or muscular pain. After this initial visit, all 4,146 patients were then equally randomized to receive standard care—a cardiologist consultation and exercise stress test—alone or in combination with CTA. Patients receiving CTA were much more likely to be given a different diagnosis. All told, 25 percent of these patients were given a different diagnosis after receiving this test compared to just 1 percent of patients who received standard care alone.

The clarification of diagnoses resulted in two significant secondary endpoint measures. Plans for subsequent testing were altered in 15 percent of patients receiving CTA compared with just 1 percent of patients in the control group. About 23 percent of patients receiving the CT scan had a change in treatment to correspond with the new diagnosis versus only 5 percent in the control group. There was no difference between the groups in either symptom severity at six weeks or subsequent hospitalizations.

"There have been studies showing that CT coronary angiograms can accurately detect coronary artery disease, but we wanted to move beyond that and ask whether this test is clinically relevant; that is, does it change the patient's care and outcome?" said David E. Newby, M.D., Ph.D., British Heart Foundation professor at University of Edinburgh, and chief investigator of the SCOT-HEART trial. "What was very clear from the findings is it can help guide which test to do next, which procedures or drugs to give and ultimately help prevent heart attacks."

Newby was surprised that after just 20 months of follow-up, there appeared to be a 38 percent reduction in the number of myocardial infarctions (MI) in patients who received a CT scan compared with the control group (26 versus 42, respectively), suggesting that clarification of diagnosis and treatment plans may lower the risk of future MIs. However, the rate of MI in both groups was low and failed to reach statistical significance. Researchers caution that further follow-up data are needed before any definitive conclusions can be drawn regarding the effect of CT scans on cardiovascular outcomes. Still, they said the data suggest that CT scans significantly clarify the diagnosis and lead to more timely focused treatments, which may in turn affect cardiovascular outcomes.

Interestingly, while the use of CT scans appeared to boost the certainty of the diagnosis of angina due to coronary artery disease, the overall frequency of this diagnosis was reduced. Newby explained this occurred because they identified more incorrect diagnoses of angina due to coronary artery disease than previously unrecognized cases of this condition.

"This means we were able to stop unnecessary treatments in the former, which are often given over a lifetime and start new treatments in those now correctly diagnosed with coronary artery disease to prevent future problems; hence the apparent reductions in heart attack," he said.

"The message to cardiologists is, if you see a patient in the clinic and you think there is any chance they have coronary artery disease, consider doing a CT scan," Newby said. "It gives you a very clear answer, and it will help manage the patients."

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