ERにおける心臓CTにより胸痛の原因が迅速に同定できる

ROMICAT II:心筋梗塞の疑いのある患者の評価において心臓CTはより迅速で有効である

ROMICAT II: Cardiac CT is faster, more effective for evaluating patients with suspected myocardial infarction

胸痛の評価において心臓CT冠動脈造影を早期に使用することにより、心筋梗塞治療のために入院させるべき患者と帰宅させても安全な患者とを医師がすぐに鑑別でき、時間と医療費を節約できるとのROMICAT IIスタディの結果が第61回American College of Cardiology学会で発表された。ROMICAT IIスタディは、胸痛を伴い救急外来（ER）を受診し、症状および早期ER評価（血液検査および心電図の結果）に基づくMIリスクが中等度の患者1,000人を組み入れた。患者は、心臓CT検査を初回の診断検査として施行される群または、患者の状態や医師の判断に基づき心臓負荷検査を行う群または全く検査を行わない標準的処置群に無作為に割り付けられた。ERにおいて、CT検査で胸痛患者を評価することにより、患者の平均病院滞在時間は18時間減少した。CT検査を受けた患者の半分が9時間以内に安全に退室したのに対し、標準治療を受けた患者のうち9時間以内に退室したのはわずか15%であった。CTを使用することにより標準治療よりもERのコストが10～20%節約できた。

Full Text

Cardiac computed tomography angiography scans can provide a virtually instant verdict on whether chest pain is from blockage of the coronary arteries. When used early to evaluate chest pain, the scans save patients and hospitals time and money by allowing doctors to quickly determine who should be admitted for treatment for a heart attack and who can be safely sent home, according to research presented at the American College of Cardiology's 61st Annual Scientific Session.

The ROMICAT II study involved 1,000 patients at nine hospitals across the United States. The results showed that using CT scans to evaluate patients with chest pain in the emergency room (ER) reduced their average time spent in the hospital by 18 hours. Half of the patients receiving the CT scan were safely discharged within nine hours compared to only 15 percent of patients receiving standard care. The use of CT resulted in 10 percent to 20 percent cost savings to the ER over standard care.

"These data suggest that doing a CT scan early benefits both patients and physicians," said Udo Hoffmann, MD, MPH, director of cardiac imaging at Massachusetts General Hospital and the study's lead investigator. "Physicians benefit because they can discharge many patients from the overcrowded ER very quickly, with solid reassurance that they're not having a heart attack, while the standard evaluation takes much longer to assess whether the symptoms stem from blockages in their arteries. Patients benefit from an earlier diagnosis and can safely go home from the ER earlier."

The study enrolled patients who arrived in the ER with chest pain and who were at intermediate risk for a myocardial infarction based on their symptoms and initial ER evaluation, which included blood tests and electrocardiogram results. Patients were randomly assigned to receive either a CT scan as their first diagnostic test or standard care, which could include a cardiac stress test or no tests at all, depending on the patient's situation and physician preference.

Because healthy patients were discharged much earlier and often needed just a CT scan and a single blood test, their health care costs were lower. "It looks like CT saves time and money for the health care system in those who have no blockages in their coronary arteries. Though only a modest amount of money is saved per patient, it may save a lot of money considering the millions of patients affected across the country," Dr. Hoffmann said. "CT allows you to spend your health care dollars focusing on the people who are actually sick. One could argue that this is a better use of health care resources."

CT scans also provide useful prognostic information that doctors can refer back to if the patient experiences chest pain again. "If their CT scan shows clear heart arteries, we know from our previous ROMICAT I study that their prognosis over the next two years is really good, which can be useful farther down the road," Dr. Hoffmann said.

Other studies have offered somewhat conflicting assessments of the efficiency and effectiveness of using CT scans as the first diagnostic test for chest pain. This trial is unique because the CT scan was done much earlier in the evaluation process compared to other studies and was used in a real-life setting. Moreover, this was the first trial to show that physicians could act on the information from the CT scan in a way that improved a measure of care – safe earlier discharge – after ER presentation for chest pain. "It shows that cardiac CT is ready for use in a pragmatic health care setting, as it is more effective than the standard ER evaluation," said Dr. Hoffmann.

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