How one minute could prevent unnecessary hospitalization, tests for patients with low-risk chest pai

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Using a shared decision-making aid to involve patients more in their own care decisions can prevent unnecessary hospitalization or advanced cardiac tests for patients reporting low-risk chest pain—for the cost of about 1 minute of time. So says a study from Mayo Clinic researchers, published online today in *The BMJ*.

According to the Centers for Disease Control and Prevention, the second highest cause of emergency department visits is chest pain.

"Chest pain can be caused by a wide variety of problems," says Erik Hess, M.D., study lead author and emergency medicine physician at Mayo Clinic. "While we recommend that people seek immediate medical help when experiencing chest pain, the next steps can vary - and be unnecessarily costly."

Patients at low risk for acute coronary syndrome - a range of conditions that includes a heart attack and is associated with sudden, reduced blood flow to the heart - are frequently admitted for observation and cardiac testing. Dr. Hess and his colleagues say this is because, "Given the potential for missing a diagnosis of acute coronary syndrome, clinicians have a very low risk threshold to admit patients for observation and advanced cardiac testing."

"Despite little possibility that these low-risk patients are experiencing

acute coronary syndrome, emergency physicians are more likely to default to admission for observation and additional testing," says Dr. Hess. "This presents a substantial unnecessary burden and cost to the patient and the health care system."

The research team felt that introducing a shared decision-making approach might not only increase patients' understanding of their symptoms and risks, but also allow them to participate more actively in deciding whether hospital admission and advanced cardiac testing were necessary.

The decision aid trial

Using the Chest Pain Choice decision aid, emergency department physicians and patients with low-risk chest pain can estimate the risk for acute coronary syndrome within the next 45 days. Based on that risk, they can then have a joint discussion on whether hospital admission and advanced cardiac testing is warranted, or whether a follow-up appointment with primary care or cardiology is a more appropriate step.

In a randomized clinical trial across six emergency departments in five states, the researchers compared usual care for 447 patients to 451 patients receiving the Chest Pain Choice decision aid intervention. The primary outcome, selected by patient and caregiver representatives, was patient knowledge. Secondary outcomes were involvement in the decision to be admitted, proportion of patients admitted for cardiac testing, and the 30-day rate of major adverse cardiac events.

Benefits and savings

The team showed that using the decision aid resulted in:

- Greater patient knowledge (answering a set of eight questions)
- Patients more involved in decision-making (using the OPTION scale)
- A greater number of patients were able to correctly assess their own 45-day risk of acute coronary syndrome within 10 percent (65 percent versus 18 percent of cases)
- Less frequent admissions for observation (37 versus 52 percent)
- More patients choosing to have additional cardiac stress testing performed in the outpatient setting (30 versus 17 percent)

Both patients and physicians were satisfied with the decision aid and its use, which, according to the study authors, "took an average of one additional minute of clinician time." Shared decision-making resulted in significantly less overuse of hospitalization and advanced cardiac testing, thereby reducing the overall burden on the health care system, as well as potential costs for patients.

"When patients are involved with their care decisions, it is more likely they will get the right care for their concerns," says Dr. Hess. "We believe that the Chest Pain Choice decision aid will make it easier for patients and physicians to have a thoughtful discussion and make an individualized care plan that is less likely to overuse unnecessary services."

Dr. Hess first presented the Chest Pain Choice decision aid at the American College of Cardiology's 65th Annual Scientific Session (Read news release.). The study was funded by the Patient-Centered Outcomes Research Institute and the Mayo Clinic Robert D. and Patricia E. Kern Center for the Science of Health Care Delivery. It was conducted in collaboration with the Knowledge and Evaluation Research Unit. This unit focuses much of its efforts on developing and validating shared decision aids across health care.

Provided by Mayo Clinic