Patients with chest pain who are admitted to the hospital after an emergency department evaluation with negative findings and nonconcerning vital signs rarely had adverse cardiac events, suggesting that routine inpatient admission may not be a beneficial strategy for this group of patients, according to an article published online by JAMA Internal Medicine.

Patients with potentially ischemic (restricted blood flow) chest pain are commonly admitted to the hospital or observed after a negative evaluation in the emergency department because of concern about adverse events. But no large studies have examined the short-term risk for a clinically relevant adverse cardiac event, including inpatient ST-segment elevation myocardial infarction (heart attack), life-threatening arrhythmia (abnormal heartbeat), cardiac or respiratory arrest, or death, according to the study.

Michael B. Weinstock, M.D., of Ohio State University, Columbus, and Mount Carmel St. Ann's Hospital, Westerville, and coauthors reviewed data from adult patients who were admitted to the hospital or observed after presenting with chest pain, chest tightness, chest burning or chest pressure and with negative findings for serial biomarkers. Data were collected from emergency departments at three community teaching hospitals and the primary outcome measurement was a composite of life-threatening arrhythmia, inpatient ST-segment elevation myocardial infarction, cardiac or respiratory arrest, or death.

Of the 45,416 encounters the authors examined, 11,230 patients met the criteria to be included in the study. In these 11,230 encounters, the average patient age was 58 years and 55 percent of the patients were women. A primary outcome of life-threatening arrhythmia, inpatient ST-segment elevation myocardial infarction, cardiac or respiratory arrest, or death occurred in 20 of the 11,230 patients (0.18 percent). But a primary outcome event occurred in only four patients after excluding from the 20 patients those patients who were not likely to be sent home from the emergency department because of abnormal vital signs or other concerning findings. Using a random sample of the original medical records, that translated to a primary outcome event occurring in 0.06 percent of patients, according to the results.

"Our study does not demonstrate that patients derive no utility from further management or diagnostic workup after the ED [emergency department] evaluation. We believe that judicious follow-up is in the best interest of most such patients. However, our findings suggest that further evaluation may be best performed in the outpatient rather than the inpatient setting, and that this information should be integrated into shared decision-making discussions regarding potential admission. Moreover, in the context of established risks due to hospitalization, we believe that current recommendations to admit, observe or perform provocative testing routinely on patients after an ED evaluation for chest pain has negative findings should be reconsidered," the study concludes.

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