

Preoperative Cardiology Assessment of Hip Fractures: How Closely Are Guidelines Followed and Does It Affect Patient Care?

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Purpose: Preoperative assessment of geriatric patients with hip fractures may require cardiac assessment in the form of cardiology consultation or transthoracic echocardiogram (TTE) with intention to optimize for surgery. Unnecessarily performing these tests can delay time to the operating room (OR). In the context of hip fractures, delay to the OR greater than 24-48 hours is associated with increased mortality. Additionally, cardiology evaluation is expensive and consumes valuable resources. Therefore, the American College of Cardiology (ACC) Foundation and the American Heart Association (AHA) have set clinical practice guidelines (CPGs) to aid in selecting the right patient scenarios for cardiac evaluation.

Methods: A retrospective review of a trauma registry at a Level-I trauma center safety-net hospital with a standardized hip fracture protocol identified 361 patients with hip fractures over the age of 65 years during a 3-year period. Chart review was performed to determine whether patients met criteria for cardiac evaluation or TTE per the ACC/AHA CPGs. The indications for cardiology consultation were unstable coronary syndrome, decompensated heart failure, significant arrhythmias, or severe valvular disease. Indications for TTE were dyspnea of unknown origin, worsening symptoms of heart failure, history of valvular dysfunction or heart failure without TTE in the last year or worsening symptoms, or suspicion of moderate or greater valvular disease. TTE results were examined to determine if they identified pathology that may alter management: left ventricular ejection fraction less than 25%, right ventricular systolic pressure 55 mm Hg or greater, or moderate to severe valvular disease.

Results: Cardiology consult was requested for a total of 160 (44.3%) patients; of those, 96 (60%) patients did not meet the ACC/AHA criteria for doing so. TTE was performed for 156 (43.2%) of patients, despite only being indicated for 54 patients (15%). Of those receiving TTE, 65 (41.7%) identified potentially management-altering pathology. Those receiving cardiac clearance had a statistically significant longer time to surgery (25.4 vs 19.3 hours) ($P < 0.01$). Those who underwent TTE also had a statistically significant longer time to surgery (26 vs 18.9 hours) ($P < 0.01$). There was no difference in length of stay between those receiving cardiology clearances and those who did not. Similarly, there also was no difference in length of stay between those who underwent TTE and those who did not.

Conclusion: Preoperative cardiac assessment in the form of cardiology consult and TTE are frequently obtained outside of the established ACC/AHA guidelines and delay time to the OR often without benefit. Attempts should be made to more closely follow the CPGs set forth by the ACC/AHA to decrease surgical time to the OR and reduce unnecessary waste of resources without adversely affecting patient outcomes.