Left Ventricular Ejection Fraction as a Predictor of All-Cause Mortality and Major Adverse Cardiovascular Events in Patients Presenting with Noncardiac Conditions
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**Background:**
Patients with sepsis and a left ventricular ejection fraction (LVEF) of <50% were found to have an elevated 30-day and 1-year rate of major adverse cardiovascular events (MACE). However, the impact of LVEF on MACE and all-cause mortality in other noncardiac hospitalized patients has not yet been well established.

**Methods:**
918 consecutive patients, aged 18 years and older who presented to the University of Kentucky Medical Center between January 2017 and October 2017 for noncardiac conditions were retrospectively studied. Of these patients, 314 patients underwent echocardiography and non-gated computed tomography (CT) scans of the chest as part of their initial work-up. Echocardiograms were interpreted by board certified readers and CT scans of the chest were read by a noncertified and a certified readers successively until 90% concordance was met for the presence and severity of coronary artery calcification (CAC). Primary and secondary outcomes were all-cause mortality and major adverse cardiovascular events at 30 days and 1 year respectively.

**Results:**
Among 314 patients who underwent echocardiography and non-gated CT scans of the chest, 219 patients had a normal EF (>50%), 28 patients had a mildly reduced EF (41-50%), 20 patients had a moderately reduced EF (31-40%), and 47 patients had a severely reduced EF (<31%). Mortality occurred in 71 (32.4%) patients with normal EF, 11 (39.3%) patients with a mildly reduced EF, 14 (70%) patients with a moderately reduced EF and 29 (61.7%) patients with a severely reduced EF [p<0.001].

Mortality at 30 days was 50% and 55% of deaths in the moderate and severely reduced EF groups respectively. Although MACE occurred in only 15 patients, it was more prevalent in the moderate (20%) and severely reduced (14.9%) EF groups compared to those with mildly reduced EF (0%) or normal EF (1.8%) with a p<0.001.

Patients in the moderately reduced EF (50%) and severely reduced EF (44.7%) groups were also more likely to have left main coronary artery calcification than the mildly reduced EF (35.7%) and the normal EF groups (24.2%) with a p=0.006.

The presence and severity of CAC did not consistently predict all-cause mortality and MACE in this patient cohort.

Left ventricular ejection fraction is a useful predictor of both all-cause mortality and MACE in patients presenting with noncardiac conditions and when available, should be employed as part of a risk stratification tool for predicting outcomes.