

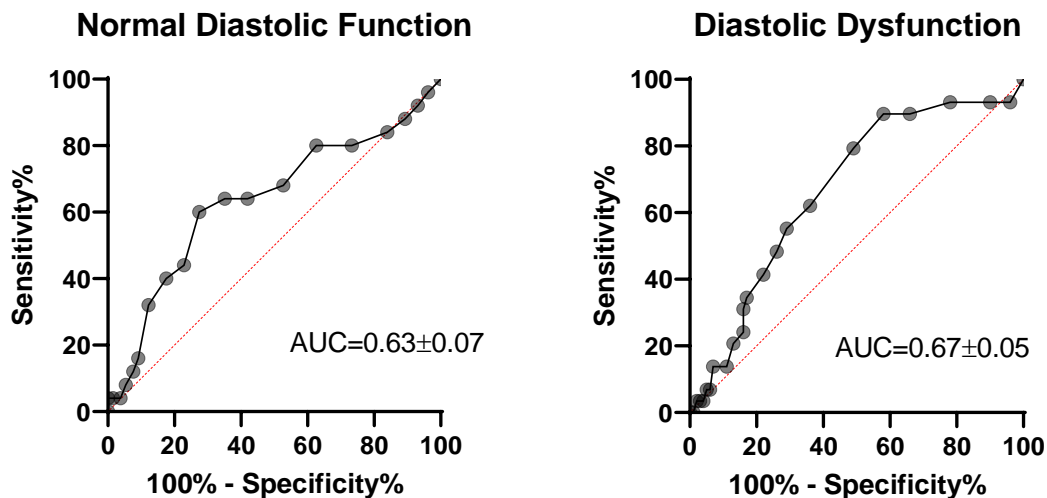
EVALUATION OF DYNAMIC MONITORS FOR THE PREDICTION OF VOLUME RESPONSIVENESS IN PATIENTS WITH AND WITHOUT DIASTOLIC DYSFUNCTION

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Patients with diastolic dysfunction comprise more than 28% of patients aged 60 years and older. Left ventricular diastolic dysfunction is known to predict adverse outcomes such as major adverse cardiovascular events (MACE), in-hospital mortality, and extra fluid support in cardiac surgery. Intra-operative optimization of cardiac function, in particular that of intravascular volume, can decrease the incidence of complications. The current gold standard of measurement of cardiac function in response to intravenous fluids in patients under general anesthesia is the change in arterial waveform (PPV – Pulse Pressure Variation, SVV – Stroke Volume Variation) associated with respiration. Both PPV and SVV have shown a statistically significant correlation with fluid responsiveness ($\geq 10\%$ increase in cardiac index). The SVV values predictive of fluid responsiveness have been characterized in the general patient population. Thresholds haven't been specifically validated for patients with impaired ventricular relaxation. We believe that proper identification and management of patients with diastolic dysfunction can improve perioperative outcomes in our population. Our research aims to evaluate and characterize the potential impact of diastolic dysfunction on SVV, and its ability to predict volume responsiveness as measured by EV1000 device.

Assessment of left ventricular diastolic dysfunction via TTE was measured prior to induction of anesthesia. As hemodynamic parameters necessitated, 200 ml of crystalloid or colloid was infused via Belmont Rapid Infuser. Each patient's response to each fluid bolus was automatically recorded by the monitor, and subsequent comparisons were made between patients with and without diastolic dysfunction.

To date, 35 patients have been recruited. ROC curve analysis was produced to compare fluid responsiveness in those with or without diastolic dysfunction.



The total sample size is currently too small for conclusions. Additional data is necessary to fully characterize the relationships.