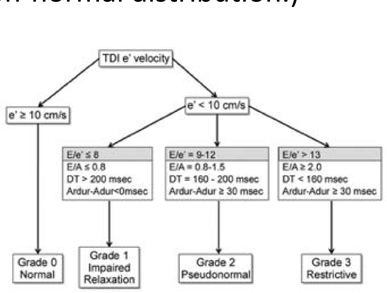
The effects of an IV-fluid bolus on the assessment of diastolic function.
Presenter: Sebastian Ayala

Background

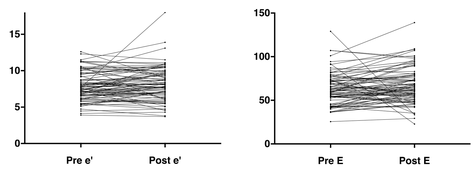
- Diastolic dysfunction is defined as the inability of the left ventricle to fill to a normal end-diastolic volume, both during exercise and at rest, without a significant increase in left atrial pressure.
- ***Diastolic dysfunction has been associated with prolonged ventilation, death, and longer ICU and hospital LOS.***

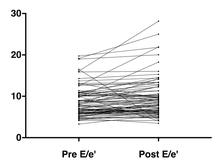
Methods

- Data was tested for normality using D' Agostino and Pearson test.
- Data was analyzed utilizing Wilcoxon matched-pairs rank test (non-normal distribution.)



Results





A simplified algorithm can accurately reproduce and assess **diastolic function** in the setting of an acute volume load.

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Discussion

This assessment protocol:

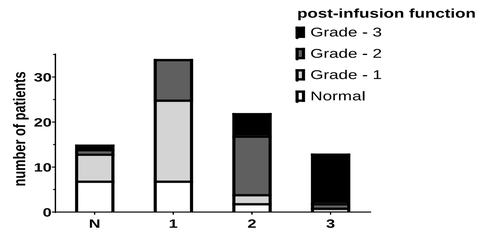
(1) Captures all of the patients that were surveyed (100% of our candidates with complete verifiable data fit the simplified algorithm parameters)

(2) Has clinical utility as the grading of diastolic function was reproducible

(3) Could offer prognostic value despite the dynamic intraoperative physiology.

Further studies are warranted to evaluate the impact of general anesthetic agents on the assessment of diastolic function & if the algorithm is generalizable to non-cardiac patient cohorts.

Results (cont.)



TEE Parameter	Overall		Females		Males	
	Before	After	Before	After	Before	After
e'						
mean±SD	7.8±2.0	8.1±2.4	7.4±1.4	7.7±1.8	8.0±2.1	8.4±2.6
95% CI (lower, upper)	7.4, 8.2	7.6, 8.6	6.8, 7.9	6.9, 8.4	7.5, 8.6	7.7, 9.0
E						
mean±SD	63±18	66±20*	63±14	77±16*	63±20	68±21*
95% CI (lower, upper)	59, 67	62, 71	58, 69	71, 84	58, 68	62, 73
E/e'						
mean±SD	8.7±3.6	9.6±4.7*	9.0±3.2	10.9±4.5*	8.5±3.8	9.0±4.8*
95% CI (lower, upper)	7.9, 9.4	8.6, 10.6	7.7, 10.3	9.1, 12.6	7.5, 9.5	7.7, 10.2

References

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2. Apostolakis EE, Baikoussis NG, Parissis H, Siminelakis SN, Papadopoulos GS. Left ventricular diastolic dysfunction of the cardiac surgery patient; a point of view for the cardiac surgeon and cardio-anesthesiologist. *J Cardiothorac Surg*. 2009;4:67. Published 2009 Nov 24. doi:10.1186/1749-8090-4-67
3. Swaminathan M, Nicoara A, Phillips-Bute BG, et al. Utility of a Simple Algorithm to Grade Diastolic Dysfunction and Predict Outcome After Coronary Artery Bypass Graft Surgery. *The Annals of thoracic surgery.* 2011;91(6):1844-1850.

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