

# The effects of an IV-fluid bolus on the assessment of diastolic function.

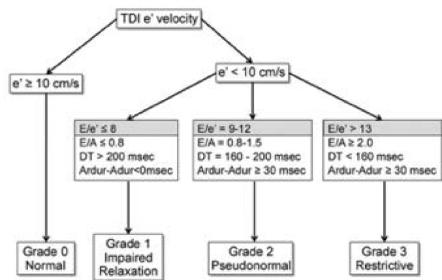
Presenter: Sebastian Ayala

## Background

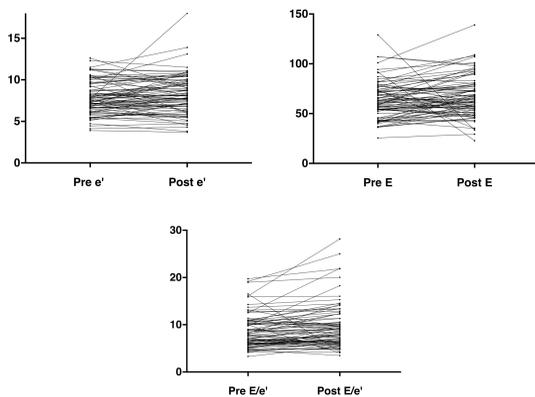
- Diastolic dysfunction is defined as the inability of the left ventricle to fill to a normal end-diastolic volume, both during exercise and at rest, without a significant increase in left atrial pressure.
- **Diastolic dysfunction has been associated with prolonged ventilation, death, and longer ICU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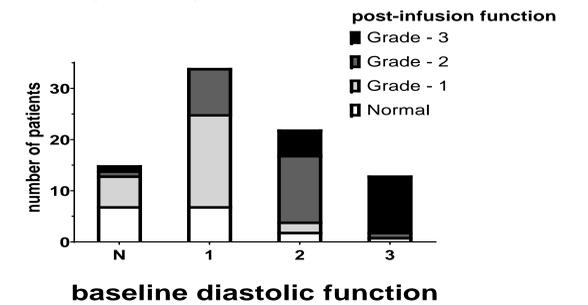
## Discussion

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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