



The 44th Annual International Congress of the
**EGYPTIAN SOCIETY OF
CARDIOLOGY**
CardioEgypt2017

20-23
February 2017
Sharm El Sheikh

Atrial Fx

Antoine Fakhry AbdelMassih
(MD, Pediatric Cardiology, Kasralainy)

Declaration

- No conflict of interests



The 44th Annual International Congress of the
**EGYPTIAN SOCIETY OF
CARDIOLOGY**
CardioEgypt2017

ILOs

- 1-components of atrial functions
- 2-Different Methods of assessment
- 3-Atrial Fx in health and disease



Mechanical Importance of atrial FX

Components

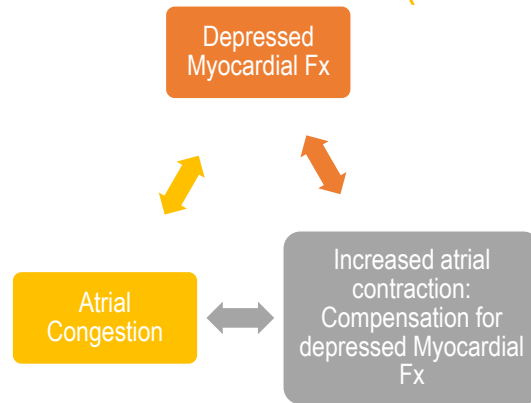
Reservoir
(stores
blood)

Conduit
(Passive
emptying)

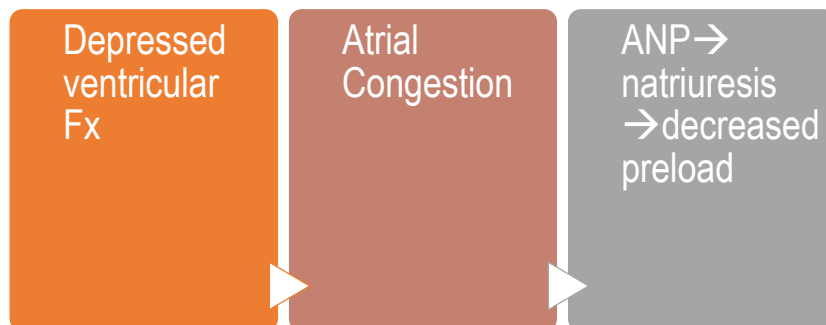
Pump
function



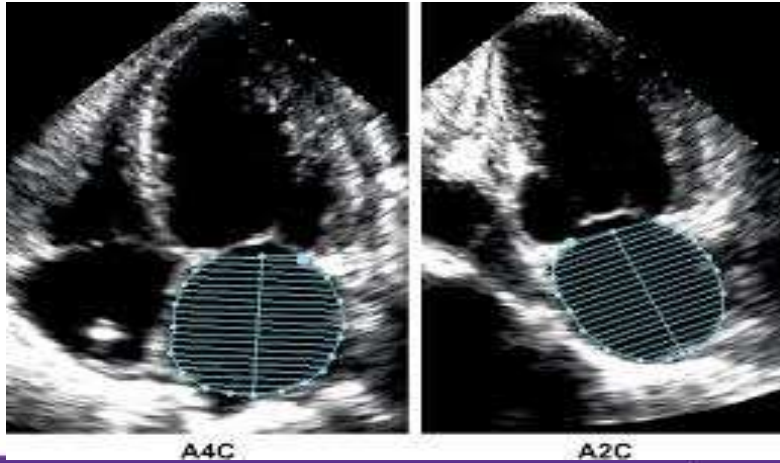
Mechanical Importance of atrial FX (Cont'd)



Others hormonal



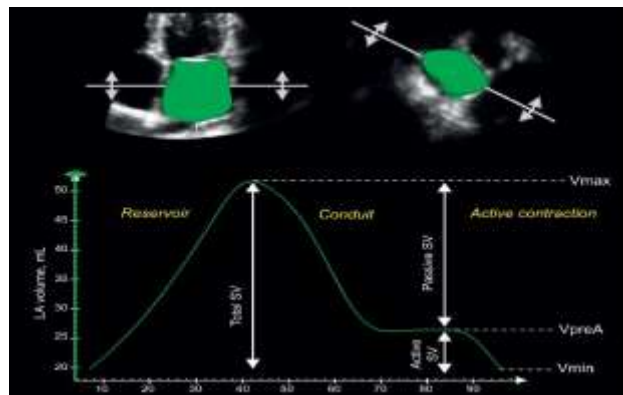
I-Atrial Volumes




 The 44th Annual International Congress of the
**EGYPTIAN SOCIETY OF
 CARDIOLOGY**
 CardioEgypt2017

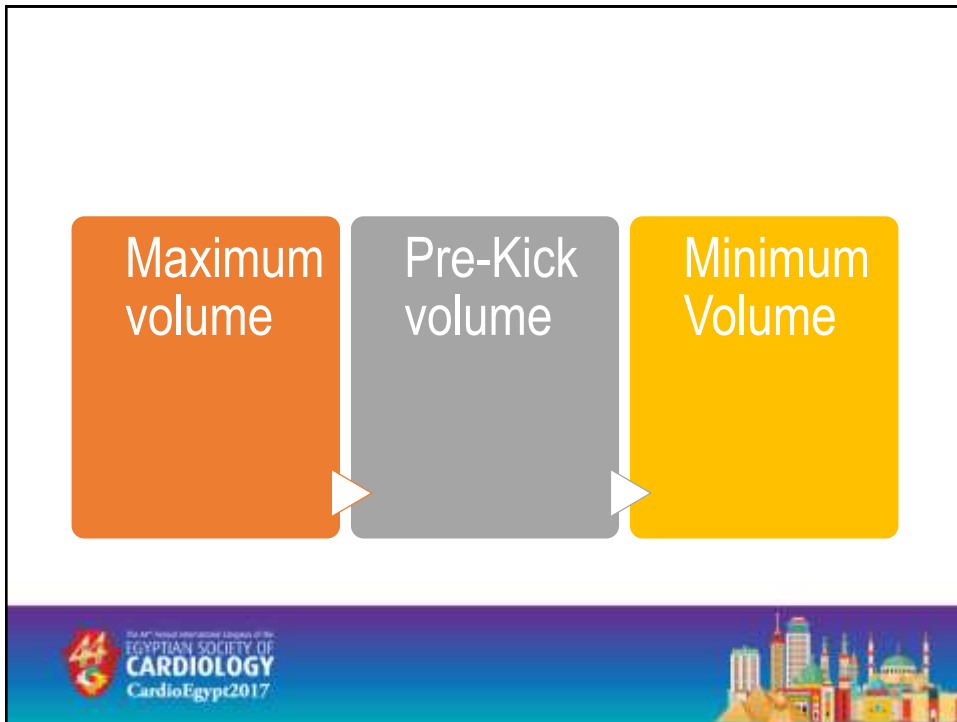


3D




 The 44th Annual International Congress of the
**EGYPTIAN SOCIETY OF
 CARDIOLOGY**
 CardioEgypt2017

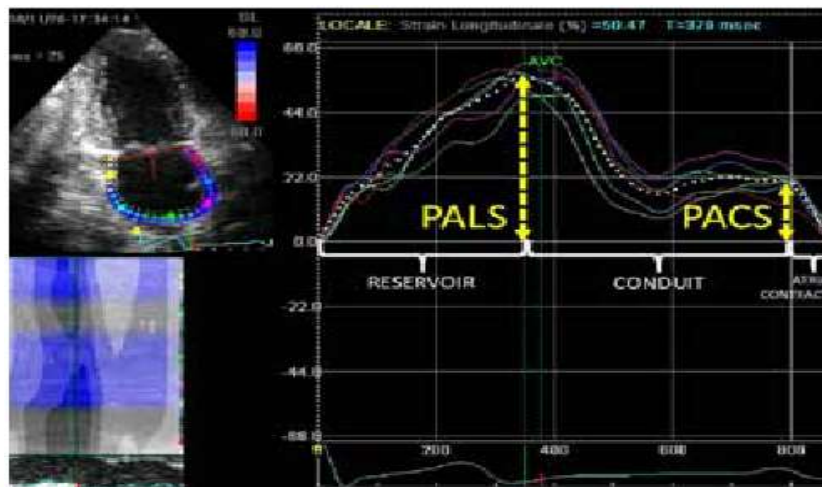
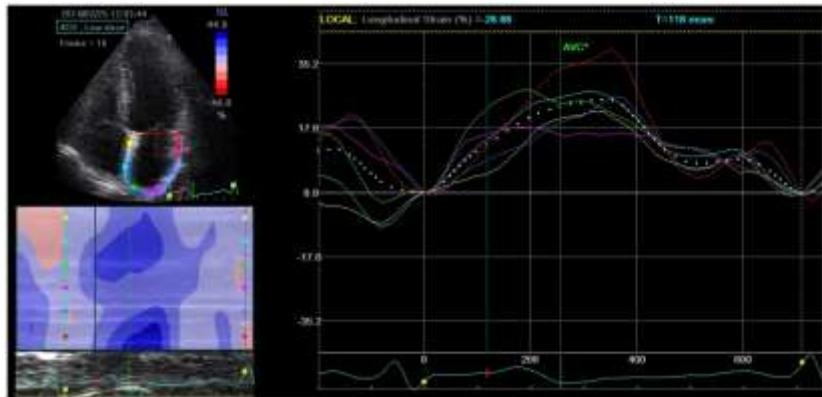




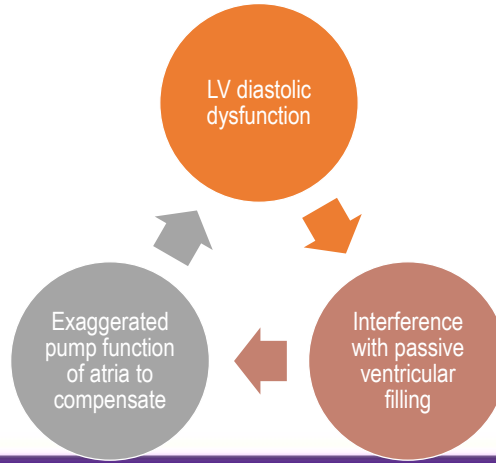
Some subsequent indices

- Atrial stroke volume= $V_{max} - V_{min}$
- Atrial expansion index: $\frac{[Atrial\ diastolic\ Fx] - [Atrial\ systolic\ Fx]}{[Atrial\ stroke\ volume]}$
- Atrial contraction index: $\frac{[Atrial\ systolic\ Fx] - [Atrial\ diastolic\ Fx]}{[Atrial\ stroke\ volume]}$

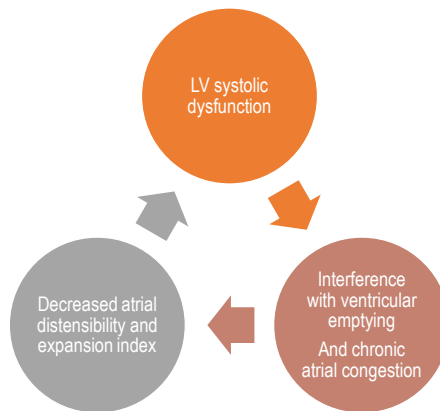
II-Estimation by speckle tracking



Significance of PACS and pump Fx



Significance of PALS and reservoir Fx



Take home messages

- -3 functions of atria: Reservoir/Conduit/Pump
- Volumetric/strain assessment
- Reservoir fx is affected with systolic ventricular dysfunction
- Pump fx is affected in diastolic ventricular dysfunction
- Both are independent predictors for poor outcome in myocardial disease and predictors of supraventricular arrhythmia



References

- **Russo C, Jin Z, Homma S, Rundek T, Elkind MS, Sacco RL, Di Tullio. MR** .Left atrial minimum volume and reservoir function as correlates of left ventricular diastolic function: impact of left ventricular systolic function. Heart.2012;98(10):813-20.
- **Todaro M. C., Choudhuri I., Belohlavek M., et al.** New echocardiographic techniques for evaluation of left atrial mechanics. European Heart Journal **Cardiovascular Imaging**. 2012;13(12):973–984. ¶ **Tsang TS, Barnes ME, Gersh BJ, Bailey KR, Seward JB.**Risks for atrial fibrillation and congestive heart failure in patients with abnormal left ventricular diastolic relaxation.Am J Cardiol. 2004 Jan 1;93(1):54-8.



Acknowledgement

- -To my family
- -To my professors especially Prof. Hala Hamza Prof. Hala Agha and Prof.Sonia who bring the best out of me
- To the one who taught me functional echocardiographic analysis: Prof. Mohamed Youssef
- To my juniors and interns who always believed in me





44
The 44th Annual International Congress of the
**EGYPTIAN SOCIETY OF
CARDIOLOGY**
CardioEgypt2017



44
The 44th Annual International Congress of the
**EGYPTIAN SOCIETY OF
CARDIOLOGY**
CardioEgypt2017



• Thank You !

