VOLUME ASSESSMENT IN CRITICALLY ILL USING TEE

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Perioperative use of transoesophageal echocardiography made uncomparable evolution in the management of critically ill patients. We still need to explore hemodynamic data provided by TEE and compare these data with that offered by other hemodynamic monitors to have the ability to use the proper monitor in the suitable situation. TEE can be used for:

1-Assessment of systolic function.
   A) Preload: It is maximum fiber length at end diastole and can be expressed by measuring end diastolic diameter, area and volume.
   B) Afterload: It is the force impeding myocardial contraction and can be expressed by measuring systemic vascular resistance and wall stress.
   C) Contractility: Can be expressed by measuring ejection fraction, fractional shortnening and fractional area change.
   D) Stroke volume and cardiac output.
   E) dp/dt measured across mitral valve in the presence of mitral regurge.

2-Assessment of diastolic function by Doppler analysis of blood flow through mitral valve and in pulmonary veins.

Volume assessment using TEE is one of the most interesting aspects of TEE in selected critically ill patients especially in comparison with pulmonary artery catheter. Lung transplantation surgery is an example of that type of surgeries in which Perioperative use of TEE for volume assessment is mandatory and can not replaced by other monitors. There are also many situations in which TEE offers more advantages than other monitors for volume assessment. Methods of volume assessment by TEE and their clinical applications are very interesting subject for research and clinical studies.

References:


