## Global Cardiology Summit

October 22-23, 2018 Osaka, Japan

## Correlation of pulmonary capillary wedge pressure calculated by Echo Doppler with invasive measurement by Swan-Ganz catheter in post CABG patients

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**Introduction:** The evaluation of cardiac function, pulmonary and therapeutic implications. The Swan-Ganz catheter can be placed bedside but it is also not free of complications. The flow propagation velocity of early mitral inflow measured by conventional Doppler and the displacement of the mitral annulus measured by Tissue Doppler has been shown to accurately reflect Pulmonary Capillary Wedge Pressure (PCWP) in cardiac patients.

**Objectives:** To study the correlation of PCWP calculated by Echo Doppler with invasive measurement by Swan-Ganz catheter in post Coronary Artery Bypass Graft (CABG) patients.

**Method:** 35 patients, who were diagnosed as multi-vessel coronary artery disease on coronary angiography and underwent elective coronary artery bypass grafting, were selected for this study. Each of the patients included in the study underwent pulmonary artery catheter (Swan-Ganz) placement before the surgery for hemodynamic measurement. Measurement of PCWP by Echo Doppler study and pulmonary artery catheter done simultaneously after transferring the patient in ICU and when patients are hemodynamically stable and on necessary post-operative medical management.

**Results:** In our present study, there was no statistically significant correlation between peak E wave velocities and measured PCWP by Swan-Ganz catheter (r=0.311, p=0.069). The relationship between E/Ea ratio and measured PCWP by Swan-Ganz catheter was the strongest (P<0.001) of all Echo Doppler variables determined. We found that if E/Ea ratio is <8, it indicates normal pulmonary capillary wedge pressure (<12 mm of Hg) and if E/Ea ratio >15 indicates raised pulmonary capillary wedge pressure (>15 mm of Hg). The E/FPV ratio >2 for predicting an elevated PCWP (>15 mm of Hg) in post CABG patients had good sensitivity (96%) and specificity (89%). It should be determined in conjugation with E/Ea ratio for the assessment of both diastolic function and filling pressures. Pulmonary capillary wedge pressure determined by different echocardiographic equations using different variables like E/Ea ratio, E/FPV ratio, FPV and IVRT had significant positive correlation with measured PCWP by Swan-Ganz catheter.

**Conclusion:** Echocardiography can be used as a bedside method of estimating and monitoring PCWP. Thereby, it will make follow up of patients with congestive heart failure more comfortable and less expensive. In addition, echocardiographic technique can be applied easily for the outdoor patients for rough estimation of PCWP.

## Biography

Avinash Pawar is currently working as a Senior Resident in the Department of Cardiology at D Y Patil Hospital, Navi Mumbai. He has keen interest in clinical and interventional cardiology.

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