



Updates

Influenza infection and acute myocardial infarction

Kwong *et al* [1] reported in the NEJM Jan 2018 that there was a significant association between respiratory infection and subsequent acute myocardial infarction. This was especially true for influenza. The risk seemed to be restricted to within 7 days of a positive laboratory result for influenza. There was no increased incidence after seventh day.

The median age of the study population was 77 years. The risk of influenza associated AMI was seen in the patients over 65 years and not in the younger cohorts. 31% of the population had been vaccinated against the virus for that influenza season but the incidence of acute myocardial infarction was not influenced by the presence or absence of vaccination.

One question which arises from this study is whether vaccination must be made mandatory for >65 adults with cardiovascular risk. The data from this study does not indicate any cardiovascular benefit. However vaccination must be considered advisable on other clinical grounds. The study makes it clear that clinicians and caregivers managing respiratory illness in elderly patients at risk of cardiovascular events must be vigilant regarding the possibility of acute myocardial infarction for 7 days, counting from the acute phase of the illness necessitating sputum collection for laboratory analysis.

Assessment of prospective CYP2C19 genotype guided dosing of antiplatelet therapy in percutaneous coronary intervention - ADAPT-PCI

This paper by Kumbhani *et al* [2] presented at American College of Cardiology Annual Scientific Session (ACC 2018), in Orlando reported the use of “Point of Care” genotype

Rapid scan of scientific papers

From the Editorial desk

testing for the CYP2C19 gene via a buccal swab. If the buccal swab revealed that there was a loss of function mutation which would lead to a poor response to clopidogrel, the treating cardiologists preferred to move away from clopidogrel to either prasugrel or ticagrelor.

Many other trials however have suggested that selecting agents on the results of platelet function testing does not affect the incidence of acute coronary events. However, a point of care genetic test would be welcomed by clinicians treating patients with repeated ischemic events while on dual antiplatelet therapy.

PFO closure vs medical therapy for cryptogenic stroke

The question raised by Ahmed *et al* [3] in their paper presented at the ACC – Scientific sessions in March 2018 is whether PFO closure has any advantage over medical therapy for preventing recurrent strokes. This was a meta-analysis of 5 studies which consisted of 3440 patients.

PFO closure appears to be superior in preventing strokes in moderate to large shunts. However in smaller shunts the stroke reduction with PFO device closure was not significant. The incidence of atrial fibrillation was significantly increased with device implantation. Coexistence of an atrial septal aneurysm did not affect the outcome.

Imaging in HFpEF

Mordi *et al* [4] reported their results of using a comprehensive echocardiographic and cardiac magnetic resonance (CMR) evaluation to differentiate patients with HFpEF and hypertensive heart disease.

The study protocol included a wide range of tests: ie: echocardiography with speckle tracking and global longitudinal strain (GLS) assessment, CMR for calculating the extra cellular volume (ECV), T1 mapping with contrast enhancements, which



helps to quantify diffuse non ischemic myocardial fibrosis. T1 mapping indicates the time for longitudinal proton magnetization to recover 63% of the baseline equilibrium volume.

The GLS, ECV and T1 mapping were the variables which could differentiate between HFpEF and hypertensive heart disease. Thus advanced imaging is required to differentiate the two entities. At present this seems indicated only for research purposes as no therapeutic changes are recommended.

PAWP or LVEDP for assessing left sided filling pressure?

In a paper presented at the ACC- Scientific sessions 2018, Reddy *et al* [5] highlighted the difference between pulmonary arterial wedge pressure and LV end diastolic pressure. The authors emphasized that the two measurements are not identical nor do they reflect the same hemodynamic information.

The PAWP is a mean value utilizing the pressure in the left atria in both systole and diastole. The LVEDP indicates only the diastolic compliance of the LV.

The PAWP and LVEDP can diverge markedly when the 'V' wave is large as in mitral stenosis, mitral incompetence, atrial fibrillation and pulmonary vein stenosis. The PAWP is probably superior to the LEDP in evaluating the cause of indeterminate dyspnea in complex situations.

References

1. Ahmad, Y., et al., *Patent foramen ovale closure vs. medical therapy for cryptogenic stroke: a meta-analysis of randomized controlled trials*. Eur Heart J, 2018.
2. Mordi, I.R., et al., *Comprehensive Echocardiographic and Cardiac Magnetic Resonance Evaluation Differentiates Among Heart Failure With Preserved Ejection Fraction Patients, Hypertensive Patients, and Healthy Control Subjects*. JACC Cardiovasc Imaging, 2018. **11**(4): p. 577-585.
3. Reddy, Y.V., A. El-Sabbagh, and R.A. Nishimura, *comparing pulmonary arterial wedge pressure and left ventricular end diastolic pressure for assessment of left-sided filling pressures*. JAMA Cardiology, 2018.
4. Kwong, J.C., et al., *Acute Myocardial Infarction after Laboratory-Confirmed Influenza Infection*. N Engl J Med, 2018. **378**(4): p. 345-353.
5. Kumbhani, D.J. *Assessment of prospective CYP2C19 genotype guided Dosing of AntiPlatelet Therapy in Percutaneous Coronary Intervention - ADAPT-PCI*. 2018 [cited 2018; Available from: <http://www.acc.org/latest-in-cardiology/clinical-trials/2018/03/09/08/30/adapt-pci>.