**A CURRENT UPDATE ON INFLUENZA AND CARDIOVASCULAR DISEASES**

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Much emphasis has been placed so far on the role of chronic risk factors leading to development and progression of atherosclerosis over years, however new studies show an important role for triggers of acute coronary syndromes (ACS). ACS triggers can cause a quick transition of stable plaques into unstable plaques which are the culprit pathology for ACS.

Influenza has been established as a clinically relevant, yet preventable trigger for ACS. In over 35,000 autopsies over 8 years, we showed that each and every influenza epidemic is associated with a sharp rise in cardiovascular death. In apo-E knockout hypercholesterolemic mice, we have shown that influenza infection can cause a marked increase in inflammatory cells in atherosclerotic plaques leading to focal inflammation in synergy with profound systemic inflammation. Multiple retrospective, prospective, and ultimately clinical trial studies in various patient groups showed that influenza vaccination is associated with a significant reduction in risk of myocardial infarction, sudden cardiac arrest, stroke, and hospitalization for cardiac causes. Based on these, American Heart Association and American College of Cardiology secondary prevention guidelines recommend influenza vaccination for all patients with cardiovascular disease (CVD). Unfortunately, the vaccine usage in patients with CVD remains less than 65% in US, and is even lower in most other countries. Efforts are needed to increase vaccination rate in cardiac patients.

Moreover, in retrospective studies we have found that treatment of influenza with neuraminidase-inhibitor medications is associated with a decreased risk of developing stroke or transient ischemic events as well as cardiovascular events in high risk subjects. These studies suggest an important role for influenza in pathogenesis of acute cardiovascular events and call for multi-disciplinary efforts to improve vaccination rates in high risk subjects and also to consider anti-influenza agents for preventing cardiovascular events after influenza infection.