**EFFICIENT CHEST PAIN EVALUATION IN THE ED: ADDITIONAL VALUE OF HIGH SENSITIVITY TROPONIN**

**J.H. Chesebro**

Umass Memorial Medical School and Medical Center, Worcester, MA, USA

The challenge of chest pain (CP) evaluation is not to rule in or out MI or CAD, but to determine patients especially at short-term (30 days-6 mo) risk of death or MI. Initial CP evaluation by AHCPR (Agency for Health Care Policy & Research) Guidelines into low (15%), intermediate (70%) or high (15%) risk depends on clinical history, physical exam and ECG for ST-changes during or between chest pains. Continuous ST-segment monitoring for acute change is ideal since >2/3 of ischemias are asymptomatic.

Transient ST-abnormality, the strongest independent predictor, predicts >20-fold increased risk of major complications whereas troponin elevation increases risk >4-fold, but either indicates high-risk and need for coronary angiography.

If patients with atherosclerosis/CAD, diabetes mellitus and/or transient rest angina have no ST-changes, or high-sensitivity troponin (HST) indication of infarction after 2 hours of ED monitoring, intermediate-risk, they should undergo stress testing for ischemia with exercise ECG (ETT) (possible in 75%) or exercise or pharmacologic echocardiogram, MRI, or nuclear stress test for ischemia. Previously detectable regular troponin T of 0.1-<0.5 within 6 hours, had no risk of doing ETT, and now it is expected that a normal HST within 2 hours will be more efficient for starting stress testing. Those with stress test ischemia (about 55%) are admitted for coronary angiography, and those without are dismissed with a clinic visit in <72 hours to recheck status and treat risk factors.

Low risk patients (no rest but only exertional pain, no diabetes or prior atherosclerosis, normal ECG and troponin) are dismissed with clinic visit in <72 hours to assess and treat risk factors.

This ED CP evaluation is safe, short (previously <9-12h and now expected <4-6 hours with HST), predicts no cardiovascular events within 6 months, and reduces hospital admissions and cost.