Enoxaparin Strategy Appears to Reduce Reinfarction Better Than Commonly Administered Unfractionated Heparin in ST elevation myocardial infarction.

New therapy significantly reduces risk of repeat heart attack and death

Treatment with enoxaparin (a low molecular weight heparin) throughout hospitalization (up to 8 days) significantly reduced the risk of death or nonfatal re-infarction, compared to administration of unfractionated heparin (UFH) for 48 hours in patients with ST-elevation myocardial infarction (STEMI) undergoing fibrinolytic therapy, according to findings from the multicenter multinational ExTRACT-TIMI 25 trial lead by the investigators from the Brigham and Women's Hospital.

The Enoxaparin and Thrombosis Reperfusion for Acute Myocardial Infarction Treatment – Thrombolysis in Myocardial Infarction (ExTRACT-TIMI 25) trial was a randomized, double-blind, double-dummy comparison of two anticoagulant strategies 20,506 patients in 48 countries whose primary treatment for heart attack was injection of a fibronolytic (streptokinase, alteplase, tenekteplase or reteplase).

Risk of death or recurrent non-fatal heart attack within one month after treatment was significantly reduced by 17% ($p<0.001$) for patients who were administered enoxaparin compared to those who received UFH. This result was driven by a reduction in nonfatal reinfarction, from 4.5% with UFH to 3.0% with enoxaparin ($p<0.001$), with rates of death similar in both groups. There remained a net clinical benefit, despite an increased risk of major bleeds from 1.4% with UFH to 2.1% with enoxaparin ($p<0.001$). This is in keeping with prior studies in non-ST elevation MI such as INTERACT or SYNERGY where enoxaparin resulted in lower rates of recurrent ischemia. However, in ST elevation myocardial infarction enoxaparin was shown to cause increased intracranial hemorrhage in the elderly in ASSENT-3.

The findings were also released on the *New England Journal of Medicine* website, where researchers stated: "The significant 33% reduction in the relative risk of myocardial reinfarction at 30 days with enoxaparin suggests that the antithrombotic effect of this agent is superior to that achieved with the currently recommended regimen of unfractionated heparin."

Elliott Antman, M.D. Director, Samuel A. Levine Cardiac Unit at Brigham and Women's Hospital, Professor of Medicine, Harvard Medical School, and lead author of the ExTRACT-TIMI 25 study said, "Enoxaparin, a modified form of unfractionated heparin, interrupts the clotting system more efficiently and more reliably than unfractionated heparin. By doing so, enoxaparin prevents blood clots from forming again in arteries that carry blood to the heart muscle."

The study has critical importance for the treatment of most patients who suffer a heart attack. Dr. Antman said. "Although opening a blocked coronary artery with a balloon-tipped catheter, or percutaneous coronary intervention, has been shown to be an effective treatment for heart attack patients who come to specialized centers, the vast majority of patients worldwide receive clot-busting medications to treat their heart attack".

Comment: Comparison of 48 hour therapy (UFH) and hospitalization duration therapy (enoxaparin) is really comparing long versus short duration antithrombin therapy and not two different antithrombins directly.