# ABSTRACT

**Background:** Unstable angina (UA) and non-ST elevation (non-Q wave) myocardial infarction (NSTEMI) are parts of the continuum of acute coronary syndrome (ACS).The combined use of anticoagulants, antiplatelet agents, and invasive coronary procedures reduces ischemic coronary events but also increases bleeding in patients with acute coronary syndromes. We therefore assessed whether fondaparinux would preserve the anti-ischemic benefits of enoxaparin while reducing bleeding and impact on and invasive coronary procedures.

**Methods**: Sixty Patients with acute coronary syndrome (UA/NSTEMI) are included provided that they are older than 40, presenting within 24 hours from the onset, ECG changes consistent with ischemia .Patients with renal impairment creatinine >3mg/dl, patients with congenital or acquired bleeding diathesis, recent hemorrhagic stroke, later presentation>24 hrs, thrombocytopenia, hyperkalemia ,Patient with active peptic ulcer or, recent cranial trauma or age older than 75 are excluded. The patients are assigned to receive either fondaparinux (2.5 mg daily) or enoxaparin (1 mg per kilogram of body weight twice daily) for hospital stay (a mean of six days). All patients are subjected to full clinical examination, routine labs, troponin I and creatine kinase MB isoenzyme and transthoracic echocardiography.The primary outcome of the patients are monitored for,recurrent ischemia,arrhythmias requiring intervention ,medical or electrical, left ventricular dysfunction ,cardiogenic shock and death.All patient are evaluated for complications of antithrombotic treatment including bleeding and PCI related hematoma ,bleeding requiring transfusion.For patients undergoing cardiac catheter, PCI guiding catheter related thrombosis was monitored.

**Results**: Number of patients with primary-outcome events, recurrent ischemia 13.3%in enoxaparin VS 13.3% in fondaparinux group ,heart failure23.3% in enoxaparin VS 16.7% in fondaparinux group[Hazard ratio(95%CI) 0.657(0.821–1.25), P value for superiority 0.468], cardiogenic shock (6.7%)in enoxaparin VS (6.7%) in fondaparinux group,arrhythmia13.3%in enoxaparin VS 10% in fondaparinux group [Hazard ratio(95%CI) 0.722(0.85– 1.18), P value for superiority 0.4272], and death 6.7%in enoxaparin VS 6.7% in fondaparinux group during hospital stay .This reflects similar primary outcome.The number of reported hemorrhagic complications was higher in patients treated with enoxaparin (10%) compared to those treated with fondaparinux (6.7%)[Hazard ratio(95%CI) 0.643(0.818– 1.273) , P value for superiority 0.380], but P value was insignificant reflecting similar safety in both treated groups. In patients who undergone invasive strategy during treatment was compared regarding guiding catheter thrombosis. This was the least reported complication in both groups recording 3.3% and 6.7% in enoxaparin group and fondaparinux group respectively [Hazard ratio(95%CI) 2.071(1.52-0.736), P value for noninferiority 0.301] that was of no statistical significance.

**Conclusion:** In patients with non ST elevation acute coronary syndrome: Fondaparinux is similar to enoxaparin in reducing the risk of ischemic events, the incidence of hemorrhagic complications are equal with both treatments, patients treated with fondaparinux have the same risk for thrombotic complications with invasive coronary procedures.



(Key Words): enoxaparin- fondaparinux-acute coronary syndrome.