

## **Anemia and Left Atrial Area in Patients with Acute Myocardial Infarction**

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**Introduction:** Both anemia and left atrial area (LAA) are associated with adverse outcome in patients with ST elevation myocardial infarction (STEMI). Anemia is related to background medical comorbidities, and LAA is related to diastolic dysfunction. LAA is the only variable associated with diastolic function that does not change acutely following MI. Here we examine whether or not there is an association between anemia and enlarged LAA in patients with STEMI. Such an association might offer another mechanistic explanation for the adverse outcome of patients with anemia and STEMI.

**Methods:** Patients presented with STEMI and underwent primary PCI were enrolled. Patients with valvular disease were excluded. Serum hemoglobin level was measured on admission, and LAA was measured by echo on day 0-5 (median 1+1.6). Patients were followed prospectively for the occurrence of adverse cardiac events for at least one year.

**Results:** We recruited 337 consecutive patients aged 62.5±13.1 (range 24-97). Anemia (Hgb <12 gr%) was present in 90 patients (27%). Patients with anemia had larger LAA (20.4 ±4.3 vs 23.1±4.9 P=0.003), higher pulmonary arterial pressure (28.6±6.6 vs 35.4±11.3 P=0.008), with no significant change in ejection fraction (50.5±8.4 versus 48±9.6, p=0.24) suggesting chronic changes. Enlarged left atrium was associated with adverse outcome (OR=3.0, CI 95% 1.2-7.4 p=0.017). Anemia was not significantly associated with MACE (OR=1.8, CI 95% 0.8-4.1 p=0.16). However, combining enlarged LAA and anemia were significantly associated with MACE (OR=3.9, CI 95% 1.3-11.6 p=0.01).

**Conclusions:** Patients presenting with STEMI and Hb<12.0 have higher incidence of diastolic dysfunction and worse prognosis