SUMMARY of Highlights (P Rush, MD)

Tawakol et al, **Relation between resting amygdalar activity and cardiovascular events: a longitudinal and cohort study. Lancet January11,2017**

A study from Harvard, published in Lancet, January 2017. 293 subjects, average age 55 years old,
with no known heart or vascular disease had total body PET scans. The scans were actually done for a different study but some astute researcher noticed a subset of the patients had abnormal scans in 3 areas (deep brain, bone marrow, and heart). Patients were followed for up to 5 years. 22 of the patients had a heart attack during those 5 years. All of these patients who had heart attacks were among the patients with abnormal scans – although the disease then was silent. The Harvard researchers found that the heart disease had started in the deep brain (the amygdala, the fear center). Their hypothesis is that the abnormal signals from the brain caused inflammation in the bone marrow and then the blood vessels, resulting in atherosclerosis and a heart attack.

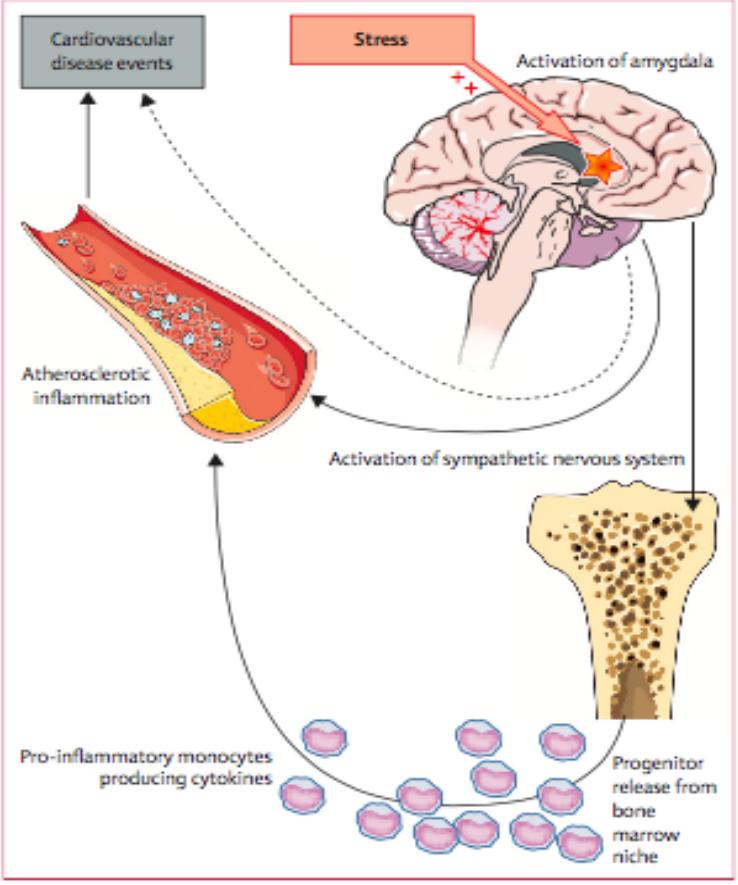

***Figure 6*: A model of stress leading to atherosclerotic inflammation**
Data suggest that at least two biologically significant pathways link amygdalar activity to cardiovascular disease events in human beings. One of these pathways is sympathetic. The other, which is the object of this study, includes activation of the bone marrow (and release of inflammatory cells), which in turn lead to atherosclerotic inflammation and its atherothrombotic manifestations.