

# 13<sup>TH</sup> EUROPEAN CARDIOLOGY CONFERENCE

December 05-06, 2016 Madrid, Spain

## Activated macrophages and coronary artery disease: The role of neopterin and growth differentiation factor 15

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Increasingly, cardiac biomarkers have provided important information in predicting short-term and long-term risk profiles in patients with acute coronary syndromes (ACS), particularly when they are used in combination. Among the numerous biomarkers, high-sensitivity C-reactive protein (hsCRP) has received widespread interest and a large database has been accumulated on their potential role as predictor of cardiovascular events. Macrophage activation, as shown by elevated levels of neopterin and GDF-15 (Growth differentiation factor-15), has a key role in all phases of the atherothrombotic process. Neopterin is a pteridine that modulates intracellular redox state (NOS) and activates the expression of pro-inflammatory genes. Evidence gathered in recent years indicates that neopterin may be a useful tool in the assessment of cardiovascular risk in both apparently healthy subjects and patients with stable and unstable coronary artery disease. GDF-15 is one of more than 40 members of the transforming growth factor- $\beta$  super family and it was originally identified in activated macrophages. Accumulating evidence indicate that circulating levels of GDF-15 are associated with the risk of death and myocardial infarction, independent of clinical variables and other biomarkers, including hsCRP and cardiac troponins.

### Biography

Pablo Avanzas graduated from Universidad de Navarra in 1998 and passed the Post-graduate Board in Cardiovascular Diseases at Gregorio Marañon Hospital in 2004. He took up a Spanish Heart Foundation Research Fellowship at Coronary Artery Research Unit, St. George's Hospital Medical School in London and some months after that he was appointed as Associate Research Investigator of the Cardiovascular Biology Research Centre at St. George's Hospital in London. He is Interventional Cardiologist at Hospital Universitario Central de Asturias in Oviedo, Spain and author of more than 170 publications in peer reviewed journals. He was Associate Editor of "*Revista Española de Cardiología*" and member of several editorial boards.

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