



The 13th Annual Vulnerable Patient Meeting

Daily Report: 1st day

26 June 2016

Reykjavik, Iceland,

Over 50 leading cardiologists, clinical researchers and basic scientists from throughout the world met in Reykjavik to discuss methods to detect and treat patients who are vulnerable to coronary heart disease, the leading cause of death in the world. The meeting focused on the identification and treatment of the vulnerable plaques that are likely to cause cardiovascular events and of patients that are at high risk to experience a cardiovascular event.

Dr. Patrick Serruys, the leader of the meeting, opened with an overview of the entire field. He noted that in the 13 years the conference has been held there has been steady progress in understanding of the molecular processes leading to the formation of advanced plaques. This progress has enhanced opportunities for detection and treatment of vulnerable plaques and patients.

Dr. Eric Peterson noted that improvements in blood testing, genotyping and imaging have the potential to move toward precision medicine for cardiovascular disease, a movement much more developed for oncologic diseases. Dr. Vilmundur Gudnason of Iceland described an Icelandic risk prediction algorithm, and noted that cardiovascular disease in Iceland has decreased markedly due to improvements in diet, physical activity and cessation of smoking.

Dr. Martin Bennett described the effect of the lifestyle on gene expression and DNA damage, and noted the implications of genetics for identification of high-risk patients. Dr. Juan Alvira described a study conducted in Spain that demonstrated the ability of peer-based methods to reduce coronary risk factors. Dr. Peterson reported that the SPRINT study, which is a large randomized trial, demonstrated that the former goal for blood pressure treatment of 140/90 is too high. Dr. Joseph Boyle demonstrated that metformin, a medication used for the treatment of diabetics, also has a beneficial stabilizing effect on atherosclerotic plaques.

Dr. Pamela Douglas discussed the role of multislice CT in assessing patients with possible coronary atherosclerosis. The results of the PROMISE trial show that CT is a viable alternative to traditional exercise testing in assessing patients with possible coronary artery disease.

Dr Marc Dweck described the use of fluoride (^{18}F) PET-CT as a non-invasive imaging method to detect plaques with micro-calcification and inflammation. The PREFFIR study will recruit 700 patients hospitalized for a cardiovascular event. Patients will undergo a PET-CT, and then be followed to determine if imaging can identify vulnerable plaques and/or vulnerable patients. Dr. Nick West described the creation of a new catheter that permits collection of blood biomarkers in the coronary arteries and thus enables assessment of the focal pathophysiological processes involved in plaque development.

Dr. Takashi Akasaka presented a case in which coronary spasm led to coronary thrombosis. Dr Escaned highlighted the role of micro-circulation on myocardial supply and the generation of angina symptoms. Two interesting cases were presented in which measurement of degree of stenosis and IVUS imaging were discussed. The day closed with the observation that advances in imaging and treatment were leading to progress of efforts to find vulnerable plaques and patients.

Slide of the Day:

Coronary angiography and CT-PET image of a patients with an acute myocardial infarction. In the left panel a coronary angiography showing a severe obstruction in the proximal segment of the left anterior descending artery (red arrow) and a patent metallic stent in the circumflex artery (white arrow). On the right panel a PET-CT increased ^{18}F -NaF uptake only in the culprit lesion.



18F-Fluoride post STEMI

