

Special Article- New Disease Markers in Cardiovascular Medicine

Cardiovascular Markers for Early Detection and Timely Intervention

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The onset and progression of cardiovascular is still a mystery. We are looking for clues to detect early signs of cardiovascular pathology – racing against the natural pathway of disease progression. The predictive diagnostic techniques will enable us to develop preventive measures and novel treatments designed to prevent and regenerate cardiovascular tissue.

One approach would be to use physical high-technology methods like the non-invasive ultrasound imaging to measure endothelial function, to estimate cardiovascular risk and define goals of treatment. A combined research has resulted in clearly-defined associations

between the advancement of vascular disease and the image detected on the monitor, such that using this advanced imaging technique actually summarizes a long chain of cardiovascular biochemical and inflammatory reactions. Other approaches are based on detecting inflammatory markers or biochemical pathologies that can define (with sensitivity and specificity) the upcoming cardiac disease and instability of the coronary lesions.

Novel methods of stem cells' research and treatments, like stem cell transplants that reverse cardiac disease is another approach for early detection, prevention and treatment of cardiac disease. The development of atherosclerosis and heart disease is connected to endothelial stem cell activity. Endothelial stem cells are responsible for the maintenance of the endothelium, and it has been found that patients with heart disease and vascular disorders can grow less endothelial stem cells, and that endothelial stem cells transplants subjectively and objectively improved the patient's condition by reversing the damage of a failing heart.

This special journal will focus on the known and new discoveries of cardio-vascular markers, will update our knowledge and understanding of atherosclerosis progression and hopefully will help in finding new future therapies for prevention of cardiovascular disease, thus, will enable timely intervention and will save many lives.

Summary

This issue will focus on up-to-date knowledge and means to detect atherosclerotic plaques using high-technologies and new approaches, trying to detect early progression and instability using biomarkers that will tell us (preferably non invasively) the present status of the plaques.

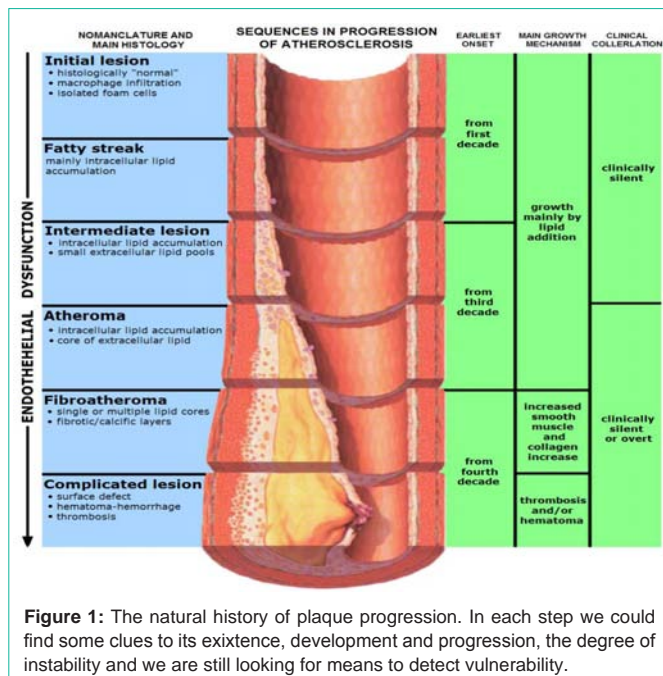


Figure 1: The natural history of plaque progression. In each step we could find some clues to its existence, development and progression, the degree of instability and we are still looking for means to detect vulnerability.