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New Twists on an Old Problem: Contemporary Experimental and Clinical Research of Coronary Heart Disease

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The heart is a strong muscular pump that beats approximately 2.5 billion times during the average lifetime to move 3,000 gallons of blood daily through 60,000mi of vessels without stopping. In order to function properly, cardiac performance requires a continuous supply of oxygenated blood through the coronary arteries and the regulation of blood flow is a complex dynamic. In childhood fat deposits on the inner walls of the blood vessels that supply the heart, other cells, waste products, and calcium become deposited on the vessel wall to form plaques. As the arteries narrow and stiffen, the heart progressively becomes deprived of oxygen and vital nutrients. Ischemia is often coupled with angina, shortness of breath, dizziness, nausea, and sweating. If these symptoms persist and deterioration continues without treatment, a complete and prolonged occlusion causes a heart attack. This results in permanent, irreparable damage to the heart muscle which eventually culminates in heart failure.

Managing the symptoms and reducing the risk for heart attack depends on how far the disease has progressed. Medicines are available to temper high blood pressure and cholesterol levels and healthy lifestyle changes can slow its progression. Interventions such as balloon angioplasty (PCI), stent or drug-eluting stent placement, and coronary artery bypass graft surgery are also common but do not necessarily prevent subsequent events. Although mortality rates from CHD in the US are declining [1], the disparities between populations still exist and the evidence continues to reinforce the concept that preventative measures must be instituted early in the form of healthy lifestyle choices in order to have the greatest lifetime benefits in delaying the progression or perhaps even promoting regression of coronary artery disease. This collection of articles highlights the spectrum of research that continues to be refined in this field in order to improve treatment options and outcomes: the mechanistic profile of coronary heart disease, identification and characterization of large animal cardiac progenitor cells (CPCs) as a translational model to optimize conditions for clinical utility, critical nuances in PCI that can greatly influence outcomes, the impact of nutritional choices, co-morbidities, gender, and environmental factors on disease progression, and the permeation of CAD in remote populations, illustrating the fact that this disease is no longer restricted to industrialized countries [2]. Together, they emphasize that while age, gender, and genetics cannot be changed, vigilant monitoring of risk factors such as stress/high blood pressure, cholesterol, diet, and limiting exposure to harmful substances can greatly reduce cardiac events and improve longevity.

References

1. Go AS, Mozaffarian D, Roger VL, Benjamin EJ, Berry JD, et al. (2013) Heart disease and stroke statistics--2013 update: a report from the American Heart Association. Circulation 127: e6-e245.

2. Global Atlas on Cardiovascular Disease Prevention and Control. Mendis S, Puska P, Norrving B editors. World Health Organization, Geneva 2011.

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