

Computational Biomechanics in Treatment and Prevention of Cardiovascular Diseases in Africa

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Abstract

Cardiovascular diseases (CVD) will become the leading cause of death by 2020 superseding infectious diseases such as HIV, tuberculosis and malaria. In Africa, a dramatic increase in CVD incidences is expected, predominantly in children, in the near future. This development concurs with the emergence of a new epidemic of obesity, diabetes and uncontrolled hypertension, partially based on improvement of socio-economic conditions and adoption of a western diet. Efficient and affordable strategies for treatment and prevention of CVD are urgently needed. With the trend to therapies based on regenerative medicine, multi-disciplinary approaches are increasingly required. The importance of biomechanics in many of these approaches, alongside cellular bioengineering, advanced biomaterials, and other disciplines is only emerging. This talk will address challenges of biomechanics in treatment of cardiovascular diseases, such as acute myocardial infarction, vascular diseases and rheumatic heart disease, with particular reference to the African situation.