Classification of Pressure Gradient of Human Common Carotid Artery and Ascending Aorta on the Basis of Age and Gender

Abstract

The current work is done to see which artery has more chance of having cardiovascular diseases by measuring value of pressure gradient in the common carotid artery (CCA) and ascending aorta according to age and gender. Pressure gradient is determined in the CCA and ascending aorta of presumed healthy volunteers, having age between 10 and 60 years. A real 2D model of both aorta and common carotid artery is constructed for different age groups using computational fluid dynamics (CFD). Pressure gradient of both the arteries are calculated and compared for different age groups and gender. It is found that with increase in diameter of common carotid artery and ascending aorta with advancing age pressure gradient decreases. The value of pressure gradient of aorta is found less than common carotid artery in both cases of age and gender.

References


Index Terms

Computer Science
Biomedical
Keywords

Ageing, Blood flow, Common Carotid artery, aorta, Pressure gradient