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Bio-fluidic study on cardiovascular blood flow related with circulatory disorders: The preliminary study from simple vessel model to rear angiogram data

Ho Seong Ji

Pusan National University, Korea

The blood flow characteristics passing through a cardiovascular system are thought to contain important information that can be used for the early detection of cardiovascular disorders, one of the major causes of death in modern life. From this sense, the biophysical description of hemodynamic and hemorheologic behavior of blood flow have received large attention in recent decades. Modern interdisciplinary researches have suggested that the fluid mechanics of blood flow play an important role in the pathogenesis and pathophysiology of vascular circulatory diseases. Even though hemodynamic and hemorheologic feature based on blood flow characteristics can give us lots of information on pathogenesis of cardiovascular disorder, there are few studies on hemodynamic and hemorheologic feature from bio-fluidic mechanical points of view. From this sense, hemodynamic and hemorheologic features were investigated through experimental study. The experimental models employed in our studies were from simple sinusoidal stenotic model to real 2 dimensional experimental models based on clinical angiogram. And also flow media was employed from plasma to real blood controlled hematocrit. Through our research work shear rate, red blood cells behavior through stenotic lesion and blood flow characteristics were investigated experimentally.

Biography

Ho Seong Ji has completed his Ph.D. at 2001 from Pusan National University and Postdoctoral studies from University of Tokyo. He is the PI of the Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2013R1A1A2012160); the title of the research work is [Multi-Scale Flow Visualization Technique for Quantitative Analysis on Cardiovascular Hemodynamics]. And he has published more than 30 papers in reputed journals and has been serving as an active member of numbers of International Societies related on Biomechanics.

hsji@pusan.ac.kr