

عنوان مقاله:

Numerical study of hemodynamic parameters in pulsatile turbulent blood flow in flexible artery with stenosis

محل انتشار:

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خلاصه مقاله:

In this paper a numerical study of hemodynamic parameters of pulsatile blood flow in flexible coronary artery with 80% stenosis by using of ADINA software has been done. Artery wall is considered rigid and elastic and blood flow is assumed Newtonian and turbulent. To solve the turbulente flow, K-ε Standard and K-ε RNG turbulent models have been used. In compared with other numerical studies, K-ε Standard model have a better agreement with experimental data. Result indicates that by changing from flexible wall to rigid wall and laminar flow to turbulent flow, the pressure is increased in the proximal of stenosis. Also the assumption of laminar flow in comparing with turbulent flow show less circumferential stress for artery wall. Another result this is that in both assumption of turbulence flow and laminar flow, flexibility of wall leads to the reduction of shear stress oscillation. Also difference between rigid and flexible wall shear stress in assumption of turbulent flow is higher than assumption of laminar flow.

کلمات کلیدی:

Fluid-solid interaction, Pulsatile flow, Turbulent flow, coronary artery

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