عنوان مقاله:

A Numerical Analysis for the Effect of Slip Velocity and Stenosis Shape on NonnewtonianFlow of Blood

محل انتشار:

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خلاصه مقاله:

The aim of this paper is to study the effect of slip velocity and shape of stenosis on non-Newtonianflow of blood through a stenosed arterial segment. Blood is modeled as Bingham-Plastic fluid in auniform circular tube with a radially non symmetric stenosis. The problem is investigated by a jointeffort of analytical and numerical techniques. The influence of stenosis shape parameter, slip velocity,stenosis height and yield stress on blood flow through a stenosed artery has been examined. Thevariations of wall shear stress, resistance to flow, volumetric flow rate and axial velocity with stenosisshape parameter, yield stress and slip velocity have been shown graphically. It is noticed that axialvelocity and volumetric flow rate was increased with slip but was decreased with yield stress. Thisinformation of blood could be useful in the development of new diagnosis tools for many diseases

کلمات کلیدی:

StenosisBingham-plastic Fluid ModelStenosis Shape ParameterSlip VelocityResistance to FlowWall Shear Stress