Stroke has become the number three killer disease in Malaysia following heart disease and cancer; with 110 people dying from it every day. Recent studies are looking into stroke treatments with minimal after surgical effect to patients. One of the alternatives is using mechanical thrombectomy devices known as GP devices which extract the blood clot in the artery without damaging the arterial wall and causing downstream embolism. In this work, the simulation of GP devices with different designs is presented. The simulation is carried out using CFD-Volume Of Fluid (VOF) model. Wall adhesion is solved in an iterative way, modifying holdups at the wall until the specified wall contact angle had been satisfied. The results show that, the demand in grid study is vital to obtain accurate results with minimal computational cost. It is found that higher pressure extracts blood clot at shorter time and device with helical tubes extract longer time than a straight tubes.

Keywords: CFD, thrombosis, blood clot