1118-76-255 **Richard Wu** (richardwu1213@gmail.com), Horace Mann School, 231 W 246th St., Bronx, NY 10471, and **Minsu Kim*** (mk4226@nyu.edu), NYU, 50 West Fourth St., New York, NY 10003.
Study of the velocity and pressure gradients across the aortic valve.

Aortic valve disease has induced a growing need for information on bio-fluid flow analysis over the last few decades. The bioengineering approaches have been empirically derived with biophysical and numerical justification for their application. In this paper, researches based on the biomechanical determinants of blood flow in the stenosed aortic valve have been carried out using physical and computational analysis. According to cardiovascular physiology, stenosis of the aortic valve leads to a pressure gradient across the valve during the time in which blood flows through the valve opening. This aortic valve gradient is expressed as an increase and decrease on each side of the defective valve. In this paper, Aortic Valve Areas(AVA) are calculated based on the different pressure gradients across the aortic valve. The continuity equation and Gorlin equation are used and computational simulations are carried out. The results show that severe AS causing LV systolic dysfunction depends on the transaortic velocity. The data show that there are patients who can be classified in AS category with mild AVV and pressure gradient, which makes therapeutic management complicated. (Received February 02, 2016)