ABSTRACT

EFFECT OF BITTER MELON ETHANOL EXTRACT *(Momordica charantia)* TO THE INTIMA-MEDIA THICKNESS, NUMBER OF FOAM CELL AND VCAM-1 EXPRESSION IN COMMON CAROTID ARTERY OF *Rattus novergicus* WITH ATHEROGENIC DIET

Azham Purwandhono

Coronary heart disease is an important health problem. Atherosclerosis is underlying of this disease whose major risk factor in its development is hypercholesterolemia. The oxidized LDL is cytotoxic and increased oxygen derived free radicals. It induces endothelial dysfunction which is initiate the development of atherosclerosis. The bitter melon contains flavonoids, vitamin A, C, E and phenols that have effect as an antioxidant. The aim of this study is to find out the mechanism of bitter melon fruit extract in inhibiting the endothelial dysfunction by measuring of intima-media thickness, number of foam cells and VCAM-1 expression on endothelial cells in the common carotid artery. It was an experimental study with post test only control group design. Twenty three male wistar rats, divided into five groups, normal diet group (negative control), atherogenic diet group (positive control), atherogenic diet + bitter melon extract 250 mg/kg/day group (P1), atherogenic diet + bitter melon extract 500mg/kg/day (P2), atherogenic diet + bitter melon extract 1000 mg/kg/day (P3). The duration of study was 60 days. One way ANOVA statistical analysis showed there is a difference in intima-media thickness and the number of VCAM-1 expression ($p<0.05$). There were no foam cells in all the control and treatment groups. The conclusion of this study is that there are significant inhibition of intima-media thickness and the number of VCAM-1 expression in the administration of 1000 mg/kg/day bitter melon extract.

Keywords: atherogenic diet, bitter melon, intima-media thickness, foam cell, VCAM-1