



The Effect of Darapladip on Lipid Profile, Insulin, Ox-LDL Serum Level and PVAT Thickness At Atherogenesis Development in DM Tipe 2 Rats Model

**Teuku Heriansyah^{1*}, Bambang Budi Siswanto², Anwar Santoso²,
Djangan Sargowo³ and Aulanni'am Aulanni'am⁴**

¹Departement of Cardiology and Vascular Medicine, Faculty of Medicine, Syiah Kuala University, Banda Aceh, Indonesia

²Departement of Cardiology and Vascular Medicine, Faculty of Medicine, University of Indonesia, Jakarta, Indonesia

³Departement of Cardiology and Vascular Medicine, Faculty of Medicine, Brawijaya University, Malang, Indonesia

⁴Laboratory of of Biochemistry, Faculty of Sciences, Brawijaya University, Malang, Indonesia

Abstract: Atherosclerosis is a chronic inflammation response of cholesterol deposition in artery vascular wall. The most common risk factor for atherosclerosis is diabetes mellitus (DM). DM affects systemically with hyperglycemia condition, increasing free fatty acid (FFA), and insulin resistance. These conditions will trigger oxidative stress oxidizes LDL-c into oxidized-LDL (ox-LDL). Macrophage phagocyte the ox-LDL then it will form the foam cell. In addition, inflammatory process will cause the vascular dysfunction which leads to molecular change in Perivascular Adipose Tissue (PVAT). One of several methods to treat type 2 DM is through inhibition of Lipoprotein-associated Phospholipase A2 (Lp-PLA2) with Darapladib. Lp-PLA2 is very specific to the inflammation in vascular, has a low biological variability, and has a role in expanding atherosclerotic plaque. This study used post-test only controlled group design. Thirty Sprague Dawley rats were divided into 3 groups which was normal group, type 2 DM model group, and type 2 DM model with Darapladib administration group. Each groups were divided into 2 serials time, 8 weeks and 16 weeks. The Parameters in this study were glucose, lipid profile, insulin, ox-LDL serum, and PVAT thickness. There were shown a significant role of Darapladib on lipid profile, insulin and ox-LDL serum.

Keywords : Darapladib, Atherosclerosis, Type 2 Diabetes Mellitus.