

ABSTRACT

Diva Nabila Auliaputri. 24020121130086. Microanatomy of the Aorta in Alloxan-Induced Diabetic Male Sprague-Dawley Rats (*Rattus norvegicus*) After Treatment with Durian (*Durio zibethinus*) Peel Ethanolic Extract. Supervised by Sri Isdadiyanto and Sunarno.

Durian is a natural antioxidant, antidiabetic, and anti-inflammatory agent. Durian peel contains polyphenol and flavonoid compounds that contribute to antioxidant activity, making it a potential therapeutic agent for managing chronic diseases such as diabetes. This study aimed to analyze the effect of durian peel ethanolic extract on the microanatomy of the aorta in alloxan-induced diabetic male Sprague-Dawley rats, as indicated by the variables of aortic lumen diameter, aortic wall thickness, presence of foam cells, fibrous plaques, and thrombus formation. This experimental study employed a Completely Randomized Design (CRD) using 25 male *Rattus norvegicus* of the Sprague-Dawley strain. The rats were divided into five treatment groups with five replications each, conducted over 28 days. The negative control group (K-) received no treatment, while the positive control group (K+) was induced with alloxan at a dose of 125 mg/kg BW. Treatment group 1 (KP1) received durian peel extract at a dose of 500 mg/kg BW, treatment group 2 (KP2) received 750 mg/kg BW, and treatment group 3 (KP3) received 1000 mg/kg BW. The data were analyzed using ANOVA at a 5% significance level ($\alpha = 0.05$). The results showed no significant differences between treatment groups ($p > 0.05$) in terms of aortic lumen diameter and wall thickness. Microanatomical observations revealed the presence of foam cells in K(+) but no significant damage in K(-), KP1, KP2, or KP3. In conclusion, the ethanol extract of durian fruit peel demonstrated the potential to repair the aorta in male diabetic Sprague-Dawley rats, as evidenced by a normal aortic lumen diameter and wall thickness, along with the absence of foam cells, fibrous plaques, and thrombus.

Keywords: atherosclerosis, antioxidants, anti-inflammatory, durian peel.