

ABSTRACT

Muhammad Banyubiru Dewo. 24020120130071. The Effect of Maduranese Herbal Formula for High Blood Sugar on Renal Histomorphometry in White Rats (*Rattus norvegicus*) Wistar Strain as a Diabetes Animal Model. Under the guidance of Agung Janika Sitasiwi and Rasyidah Fauzia Ahmar.

Diabetes mellitus (DM) is a disease characterized by elevated blood glucose levels due to metabolic disorders, primarily resulting from the pancreas's inability to secrete insulin or decreased insulin function. The maduranese herbal formula for managing high blood sugar consists of red betel leaves, insulin leaves, coriander, cinnamon, and curcuma, but its effectiveness and potential side effects on organs require further investigation. This study aimed to analyze the histomorphometric structure of the kidneys in white rats (*Rattus norvegicus*) after being treated with the Maduranese herbal formula for high blood sugar. This study employed a Completely Randomized Design (CRD) with 30 repetitions across five groups: P0 (control group), P1 (induced with metformin), P2 (5 g of the herbal formula), P3 (10 g of the herbal formula), and P4 (15 g of the herbal formula). The observed parameters included water consumption, glomerular diameter, Bowman's capsule space width, distal and proximal tubule diameter, and kidney weight. Data were analyzed using one-way Analysis of Variance (ANOVA) with a 95% confidence level. The results showed significant differences ($P < 0.05$) in water consumption and glomerular diameter, while no significant differences ($P > 0.05$) were found in kidney weight, Bowman's capsule space width, and distal and proximal tubule diameter. The conclusion of this study suggests that treatment with maduranese herbal formula for high blood sugar may affect the histomorphometric structure of the kidneys and could be treatment for diabetes melitus.

Keyword : bowmans space width, diabetes melitus, glomerular diameter, maduranese herbal formula, distal tubules diameter, proximale tubules diameter.