

## ABSTRACT

Cindy Syaharani Ruriasri. 24020122420012. The Potential of Kencing Manis Herbal Medicine from Pamekasan Madura on Spleen Structure and Function of Male Wistar Rats with Diabetes. Under the guidance of Agung Janika Sitasiwi and Kasiyati.

Hyperglycemia has a close relationship with the occurrence of chronic complications of diabetes. Increased oxidative stress in diabetic conditions causes spleen damage and has the effect of lowering the immune system. Kencing manis herbal medicine is a traditional medicine originating from Pamekasan Regency, Madura used as a diabetes medicine. The plant components used in the kencing manis herbal medicine for diabetes are insulin, red betel, temulawak, cinnamon, and coriander. The purpose of this study was to analyze the content of phytochemical compounds in the kencing manis herbal medicine and analyze its effect on splenosomatic index, spleen microscopy, and interleukin-2 levels of diabetic wistar male rats. This research is an experimental research using the complete randomized design method. The parameters of this study include spleen weight, diameter and area of germinal center, white pulp of the spleen, number of leukocytes, and IL-2 levels. Preparation of spleen histology preparations by paraffin method and hematoxylin-eosin staining. Measurement of IL-2 levels from blood plasma and musculus tissue samples using enzyme-linked immunosorbent assay (ELISA). Data were analyzed using one-way ANOVA followed by Duncan's multiple-range test. The results showed that the weight and organ index of the spleen were not significantly different ( $p>0.05$ ), the diameter and area of the germinal center showed no significant difference ( $p>0.05$ ), the diameter and area of the white pulp in the Kruskal Wallis test showed no significant difference. Leukocyte counts were significantly different ( $p<0.05$ ), plasma IL-2 levels showed no significant difference ( $p>0.05$ ), while muscular tissue IL-2 levels were significantly different ( $p<0.05$ ). This study concludes that the kencing manis herbal medicine has the potential to improve the physiological and microanatomical conditions of the spleen of diabetic rats.

Keyword: white pulp and germinal center diameter, blood glucose, IL-2, leukocytes.