

## ABSTRACT

**Kevin Maulana Rayhanda. 24020122130092.** Histological Structure of Sinister Ventricular Cardiac Muscle in Rats (*Rattus norvegicus*) after Administered by Meniran Leaf Extract (*Phyllanthus niruri* L.) and Induced with Cisplatin as a Chemotherapeutic Agent. Under the guidance of Kasiyati dan Muhammad Anwar Djaelani.

Cisplatin, as a chemotherapy agent, has the potential to cause cardiotoxicity through oxidative stress and DNA damage mechanisms. Efforts to reduce these side effects can be made by utilizing natural ingredients that have antioxidant activity, such as meniran (*Phyllanthus niruri* L.). This study aims to analyze the histological structure of rat heart left ventricular muscle after administration of phyllanthus leaf extract and cisplatin induction. This study used male white rats (*Rattus norvegicus*) of the Wistar strain, which were divided into a control group (P0), a cisplatin treatment group with 7,5 mg/kg BB dose (P1), and a combination treatment group of meniran extract with 200 mg/kg BB & 400 mg/kg BB doses and cisplatin with 7,5 mg/kg BB dose (P2 & P3). Histological preparations were made using H&E staining, and the histological structure was observed and measured histomorphometrically. Data were analyzed statistically using the Kruskal-Wallis and Mann-Whitney nonparametric tests to determine differences between groups. The results showed that the variables of ventricle epicardial and myocardial thickness were significantly different ( $P < 0.05$ ), while the variables of endocardial thickness, muscle fiber thickness, and heart muscle diameter were not significantly different ( $P > 0.05$ ). Histological observations revealed the presence of haemorrhage. The administration of meniran leaf extract at 200 mg/kg BB and 400 mg/kg BB dose, also cisplatin induction at 7.5 mg/kg potential to alter the histological structure of the epicardium through the antagonis activity of chemoteraphy and herbal agent although histological structure of myocardium had been protected at 400 mg/kg BB meniran dose.

*Keywords: epicardium, histomorphometry, myocardium*