ABSTRACT

COMPARISON BETWEEN INFLUENCE OF ADMINISTRATION GENERIC AMOXICILLIN AND BRANDED AMOXICILLIN TOXIC DOSE TO SPESIFIC ACTIVITIES CATALASE OF KIDNEY WHITE RAT (Rattus norvegicus) Sprague dawley STRAIN

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Amoxicillin in toxic doses would cause damage to the proximal tubule of the kidneys and cause accumulation of ROS (hydrogen peroxide/H₂O₂). Catalase enzyme is a hydroperoxide enzyme able to catalyze H₂O₂ substrates. A bioequivalence study noted that generic amoxicillin and branded generic amoxicillin may be bioequivalent or not. This research aims to determine the differences on kidneys specific catalase activities after toxic doses administration of generic amoxicillin and branded generic amoxicillin. In this experimental study, 27 Sprague-Dawley male rats were divided into 9 groups and were given treatment 3 times a day for 14 days. KN group (treated with aquadest 1 mL/day), KA (treated with generic amoxicillin 10.71 mg/kgBW), KB (treated with branded generic amoxicillin 10.71 mg/kgBW), A1 (treated with generic amoxicillin 102.8 mg/kgBW), A2 (treated with generic amoxicillin 205.6 mg/kgBW), A3 (treated with generic amoxicillin 411.2 mg/kgBW), B1 (treated with branded generic amoxicillin 102.8 mg/kgBW), B2 (treated with branded generic amoxicillin 205.6 mg/kgBW) and B3 (treated with branded generic amoxicillin 411.2 mg/kgBW). After that, the rats were terminated and the kidneys were taken out to measure their specific catalase activities. The results showed the mean values of kidneys specific catalase activities as follow; KN group was 0.0015 U/mg, KA was 0.0038 U/mg, KB was 0.0040 U/mg, A1 was 0.0025 U/mg, A2 was 0.0038 U/mg, A3 was 0.0055 U/mg, B1 was 0.0027 U/mg, B2 was 0.0041 U/mg, and B3 was 0.0058 U/mg. Statistically significant differences were also found in one way ANOVA test (p < 0.05) and the Post Hoc LSD test (p < 0.05). The test results showed that there were differences in the rats' kidneys specific catalase activities between those treated with generic amoxicillin and those treated with branded generic amoxicillin.

Keywords: amoxicillin, catalase, H₂O₂, ROS