ABSTRACT

Aden Lucianto Hanafie, 011211133116, 2016. Turmeric (*Curcuma longa*) Effects on Pancreatic β Cell Population and Glucose Level in Rat Diabetic Model. Research Paper, Faculty of Medicine, Universitas Airlangga, Surabaya.

Background: The existing contents in turmeric (*Curcuma longa*) believed can control the diabetes mellitus (DM). This study was conducted to assess the effect of turmeric on the blood glucose levels and the pancreatic β cell population using rat diabetic model.

Method: This research is an experimental study with turmeric extract as a treatment. The design is the randomized controlled post-test only group design. The sample is using 30 healthy male white rat (*Rattus norvegicus*, Wistar strain), 8 weeks old, weighing 120 ± 5 grams. They were divided into three treatment groups randomly. First group, as control group, was given aquadest only and not received any treatment. Second group, as DM group, was given streptozotocin (STZ) set at 50 mg/kg and not received treatment. Third group, as DM + turmeric group, was given STZ set at 50 mg/kg and turmeric extract as treatment. At the end of the treatment period, blood glucose levels were measured and counting the histological analysis of pathological anatomy of the pancreatic β cells populations.

Result: The mean population of pancreatic β cells in DM group are smaller than the normal group. The mean population of pancreatic β cells in DM + turmeric group are more plenty compared with DM group. Blood glucose levels on DM + turmeric group is lower than DM group.

Conclusion: It can be concluded that the turmeric extract can increase the population of pancreatic β cells and also decrease the blood glucose levels.

Keywords: diabetes mellitus, turmeric extract, pancreatic β cell, blood glucose level