ABSTRAK

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Program Studi : Farmasi Klinis
Judul : Gambaran Histopatologi Pankreas Pada Tikus Putih Diabetes yang Di Induksi Aloksan dan Diberi Ekstrak Bandotan *(Agerotum Conyzoides)*

Kondisi hiperglikemia muncul akibat kerusakan sel beta pankreas. Masyarakat memanfaatkan tumbuhan bandotan (Ageratum conyzoides L) sebagai obat tradisional karena mengandung metabolit sekunder, dimana tanaman ini termasuk dalam famili Asteraceae. Penelitian bertujuan mengamati gambaran histopatologi organ pankreas tikus seusai induksi aloksan dan pemberian ekstrak etanol daun bandotan. Metode yang diterapkan adalah eksperimen murni menggunakan desain posttest only control group, berlokasi di Laboratorium Terpadu Universitas Prima Indonesia Medan. Daun bandotan seberat 4-5 kg digunakan sebagai sampel penelitian. Sebanyak 24 ekor tikus putih dikelompokkan dalam enam bagian: kelompok perlakuan tikus diabetes yang diberi ekstrak daun bandotan dosis 100 mg/kg BB, 200 mg/kg BB, 400 mg/kg BB, kontrol positif, kontrol negatif, serta kelompok tikus normal. Pemeriksaan gambaran histopatologi dilaksanakan melalui penggunaan mikroskop cahaya pada tingkat pembesaran 100x dan 400x serta pengukuran kerusakan pankreas menggunakan metode skoring. Analisis data dilakukan dengan pendekatan univariat memakai uji statistik deskriptif. Observasi menunjukkan bahwa tingkat kerusakan pankreas pada kelompok tikus diabetes yang mendapat aloksan dan ekstrak daun bandotan dosis 100 mg/kg BB mencapai 1,00, sedangkan dosis 200 mg/kg BB menunjukkan angka 0,25. Pemberian ekstrak daun bandotan dosis 400 mg/kg BB memperlihatkan tidak ada kerusakan pankreas, serupa dengan kondisi kelompok tikus normal. Pada kelompok kontrol positif dengan glibenkamid 0,65 mg, tingkat kerusakan pankreas tercatat 1,00, sementara kontrol negatif (aquadest) menunjukkan nilai 1,25. Berdasarkan pengamatan tersebut, dapat diketahui bahwa ekstrak daun bandotan dosis 400 mg/kg BB memberikan efek terbaik dalam mencegah kerusakan pankreas pada tikus diabetes.

Kata kunci:
Pankreas, aloksan, daun bandotan, histopatologi

ABSTRACT

Name : *Fitriah Parmadami Hasibuan*
Study Programme : *Clinical Pharmacy*
Title : *Histopathological Overview of Pancreas in Diabetic White Rats Induced by Alloxan and Given Bandotan Extract (Agerotum conyzoides)*

Hyperglycemia occurs due to damage to pancreatic beta cells. Communities utilize goat weed (Ageratum conyzoides L), a plant from the Asteraceae family, as traditional medicine due to its secondary metabolite content. This research aimed to examine the histopathological features of rat pancreatic tissue following alloxan induction and administration of goat weed leaf ethanol extract. The method employed was a true experimental design using a posttest-only control group, conducted at the Integrated Laboratory of Prima Indonesia University in Medan. Goat weed leaves weighing 4-5 kg were used as research samples. Twenty-four white rats were divided into six groups: diabetic treatment groups given goat weed leaf extract at doses of 100 mg/kg BW, 200 mg/kg BW, 400 mg/kg BW, positive control, negative control, and normal rat group. Histopathological examination was performed using a light microscope at 100x and 400x magnification, and pancreatic damage was measured using a scoring method. Data analysis was conducted using a univariate approach with descriptive statistical tests. Observations showed that the level of pancreatic damage in the diabetic rat group receiving alloxan and goat weed leaf extract at 100 mg/kg BW reached 1.00, while at 200 mg/kg BW it showed 0.25. Administration of goat weed leaf extract at 400 mg/kg BW showed no pancreatic damage, similar to the normal rat group condition. In the positive control group with glibenclamide 0.65 mg, the pancreatic damage level was recorded at 1.00, while the negative control (aquadest) showed a value of 1.25. Based on these observations, it can be determined that goat weed leaf extract at a dose of 400 mg/kg BW provided the best effect in preventing pancreatic damage in diabetic rats.

Keywords:
Pancreas, alloxan, bandotan leaves, histopathology