

EFEK PEMBERIAN EKSTRAK BUNGA KRISAN (*Chrysanthemum morifolium*) TERHADAP PROFIL KADAR GULA DARAH PADA TIKUS PUASA (*Rattus norvegicus*) JANTAN GALUR WISTAR MODEL HIPERKOLESTEROLEMIA-DIABETES

ABSTRAK

Tujuan

Diabetes melitus merupakan penyakit metabolik kronik akibat gangguan kerja dan sekresi insulin yang sering disertai hiperkolesterolemia. Bunga krisan (*Chrysanthemum morifolium*) mengandung senyawa bioaktif yang berpotensi memiliki efek antihiperqlikemik dan antihiperkolesterolemia. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak etanol bunga krisan terhadap kadar gula darah puasa dan kadar kolesterol pada tikus putih jantan galur Wistar model hiperkolesterolemia-diabetes.

Metode

Penelitian eksperimental dengan desain *pre-test and post-test control group* dilakukan pada 30 ekor tikus putih jantan galur Wistar yang dibagi menjadi enam kelompok: normal, kontrol negatif, kontrol positif (metformin 500 mg/kgBB), serta kelompok ekstrak etanol bunga krisan dosis 75, 150, dan 300 mg/kgBB. Ekstrak diperoleh menggunakan metode *Ultrasound-Assisted Extraction* (UAE) dengan etanol 96% dan diberikan selama 14 hari. Parameter yang diukur adalah kadar gula darah puasa dan kolesterol total sebelum dan sesudah perlakuan. Analisis data menggunakan uji Kruskal–Wallis dan Mann–Whitney ($p < 0,05$).

Hasil

Ekstrak etanol bunga krisan menurunkan kadar gula darah puasa dan kolesterol secara bermakna dibandingkan kontrol negatif ($p < 0,05$). Penurunan terbesar ditemukan pada dosis 300 mg/kgBB dengan nilai GDP $92,50 \pm 2,08$ mg/dL dan kolesterol $23,75 \pm 1,50$ mg/dL. Tidak terdapat perbedaan bermakna antara kelompok metformin dan ekstrak dosis 300 mg/kgBB ($p = 0,050$).

Kesimpulan

Ekstrak etanol bunga krisan memiliki efek antihiperqlikemik dan antihiperkolesterolemia yang signifikan dan bersifat dosis-dependent, dengan dosis 300 mg/kgBB sebagai dosis paling efektif dan sebanding dengan metformin.

Kata kunci: *Chrysanthemum morifolium*, diabetes melitus, hiperkolesterolemia, gula darah puasa, tikus Wistar.

EFFECT OF CHRYSANTHEMUM (*Chrysanthemum morifolium*) FLOWER EXTRACT ADMINISTRATION ON BLOOD GLUCOSE PROFILE IN FASTING MALE WISTAR RATS (*Rattus norvegicus*) WITH HYPERCHOLESTEROLEMIA-DIABETES MODE

ABSTRACT

Objective

Diabetes mellitus is a chronic metabolic disorder caused by impaired insulin secretion and action, often accompanied by hypercholesterolemia. *Chrysanthemum morifolium* contains bioactive compounds with potential antihyperglycemic and antihypercholesterolemic effects. This study aimed to evaluate the effect of ethanol extract of chrysanthemum flowers on fasting blood glucose and cholesterol levels in male Wistar rats with a hypercholesterolemia–diabetes model.

Methods

This experimental study employed a *pre-test and post-test control group* design. Thirty male Wistar rats were divided into six groups: normal control, negative control, positive control (metformin 500 mg/kg body weight), and three treatment groups receiving ethanol extract of chrysanthemum flowers at doses of 75, 150, and 300 mg/kg body weight. The extract was obtained using the *Ultrasound-Assisted Extraction* (UAE) method with 96% ethanol and administered orally for 14 days. Fasting blood glucose and total cholesterol levels were measured before and after treatment. Data were analyzed using the Kruskal–Wallis test followed by the Mann–Whitney post hoc test with a significance level of $p < 0.05$.

Results

The ethanol extract of chrysanthemum flowers significantly reduced fasting blood glucose and cholesterol levels compared to the negative control group ($p < 0.05$). The greatest reductions were observed at a dose of 300 mg/kg body weight, with fasting blood glucose of 92.50 ± 2.08 mg/dL and cholesterol of 23.75 ± 1.50 mg/dL. No significant difference was found between the metformin group and the 300 mg/kg body weight extract group ($p = 0.050$).

Conclusion

Ethanol extract of *Chrysanthemum morifolium* exhibits significant antihyperglycemic and antihypercholesterolemic effects in male Wistar rats with a hypercholesterolemia–diabetes model. These effects are dose-dependent, with the 300 mg/kg body weight dose being the most effective and comparable to metformin.

Keywords: *Chrysanthemum morifolium*, diabetes mellitus, fasting blood glucose, hypercholesterolemia, Wistar rat.