

ABSTRAK

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Latar Belakang : *International Diabetic Federation* (IDF) melaporkan bahwa prevalensi DM tipe 2 secara global terus meningkat di setiap tahunnya. Pengelolaan DM tipe 2 secara konvensional seperti metformin dan sulfonilurea serta terapi insulin dalam jangka panjang menimbulkan efek samping, seperti gangguan pencernaan, risiko hipoglikemia, gangguan fungsi ginjal, peningkatan berat badan serta reaksi terkait prosedur injeksi. Produk herbal dianggap mampu memberikan solusi yang lebih alami dalam penanganan berbagai penyakit, dengan efek samping yang lebih rendah. Salah satu tanaman herbal yang berpotensi sebagai terapi komplementer adalah *Acanthus Illicifolius* (tanaman jeruju) yang mengandung berbagai antioksidan, seperti flavonoid, alkaloid, dan saponin.

Tujuan : Menganalisis pengaruh pemberian seduhan daun jeruju (*Acanthus illicifolius L*) terhadap HOMA-IR dan TNF- α pada tikus putih jantan dengan induksi STZ-NA.

Metode : Penelitian *true experiment* menggunakan rancangan acak lengkap *randomized post-test only with control group design*. Tikus putih jantan galur wistar (n=30) 5 kelompok hewan coba (K0, K-, K+, P1 dan P2). Diinduksi STZ-NA selama 3 hari, dan diberikan intervensi selama 28 hari melalui sonde lambung. Intervensi seduhan daun jeruju dengan dosis 1,2 ml/200gBB/hari (P1) dan 2,4 ml/200gBB/hari (P2).

Hasil : Pemberian intervensi pada P1 dan P2 menunjukkan penurunan kadar TNF- α yang signifikan yaitu 7,80 pg/ml dan 6,94 pg/ml serta penurunan HOMA-IR yang signifikan yaitu 3,75 dan 3,28 dibandingkan dengan K+ dan K-.

Kesimpulan : Seduhan daun jeruju memperbaiki serta menurunkan reaksi inflamasi dan resistensi insulin pada tikus dengan DM tipe 2.

Kata Kunci : Seduhan daun jeruju, DM tipe 2, HOMA-IR, TNF- α

ABSTRACT

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Introduction: *The International Diabetes Federation (IDF) reported that the global prevalence of type 2 diabetes mellitus (DM) increases yearly. Conventional type 2 DM management, such as with metformin, sulfonylureas, and long-term insulin therapy, the side effects can caused gastrointestinal disorders, hypoglycemia risk, impaired renal function, weight gain, and injection-related reactions. Herbal products provide more natural solutions for treating various diseases with fewer side effects. One such plant with potential as a complementary therapy is the jeruju plant (*Acanthus ilicifolius*), which contains multiple antioxidants, such as flavonoids, alkaloids, and saponins.*

Objective: *To analyze the effect of jeruju leaf brew on HOMA-IR and TNF- α in male white rats with STZ-induced diabetes.*

Methods: *This true experimental research study was used a completely randomized post-test-only design with a control group. The experimental animals were Wistar male white rats ($n = 30$), divided into five groups: K0, K-, K+, P1, and P2. The rats were administered STZ-NA for three days and received an intervention through a gastric tube for 28 days. The intervention consisted of jeruju leaf brew at 1.2 ml/200 g BB/day (P1) and 2.4 ml/200 g BB/day (P2).*

Results: *Intervention in groups P1 and P2 were showed significant decreases in TNF- α levels (7.80 pg/ml and 6.94 pg/ml, respectively) and HOMA-IR (3.75 and 3.28, respectively), compared to groups K+ and K-.*

Conclusion: *Jeruju leaf brew improved and reduced inflammatory reactions and insulin resistance in rats with type 2 DM.*

Keyword: *HOMA-IR, Jeruju Leaf Brew, TNF- α , Type 2 DM*