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Pengaruh Pemberian Kombinasi Deferiprone dan Ekstrak Etanol Buah Mahkota Dewa Terhadap Kadar Fe di Organ Ginjal Tikus Model Hemosiderosis = Effect Combination Deferiprone and Ethanol Extract of Mahkota Dewa Fruit on Fe Levels in Kidney Organs of Hemosiderosis Model Rats

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Abstrak

Latar Belakang Zat besi berlebih sering terjadi pada pasien thalasemia. Akumulasi besi membuat ginjal rentan rusak dan mengganggu fungsi normal ginjal. Oleh karena itu, dibutuhkan agen kelasi seperti deferiprone. Deferiprone dapat menyebabkan neutropenia, sehingga dibutuhkan bahan alam yang mampu mengkelasi besi yaitu Mahkota Dewa. Penelitian ini bertujuan untuk mengetahui efektivitas kombinasi deferiprone dengan ekstrak etanol buah Mahkota Dewa terhadap penurunan kadar Fe di organ ginjal tikus model hemosiderosis dengan efek samping minimal. Metode Penelitian menggunakan tikus Sprague-Dawley jantan dan dibagi menjadi 6 kelompok: Normal (N), Kontrol Negatif (KN), Deferiprone (D), Ekstrak Etanol Buah Mahkota Dewa 100 mg/kgBB (PM), Kombinasi PM dan Deferiprone dosis 462,5 mg/kgBB (DPM-1), Kombinasi PM dan Deferiprone dosis 231,2 mg/kgBB (DPM-2). Tikus selain kelompok N diinduksi besi 15 mg/x selama 8 minggu. Kelompok D, PM, DPM-1, dan DPM-2 mendapat perlakuan selama 5 minggu. Pengukuran kadar Fe ginjal menggunakan Atomic Absorption Spectrometry (AAS). Hasil Kelompok DPM-1 meningkatkan kadar Fe ginjal dibandingkan semua kelompok. DPM-2 tidak menurunkan kadar Fe ginjal dibandingkan KN, tetapi peningkatan kadar Fe lebih sedikit dari deferiprone. Data awal tidak terdistribusi normal, kemudian ditransformasi dan pada uji Shapiro-Wilk menunjukkan data terdistribusi normal (p>0,05). Hasil ANOVA Oneway menunjukkan tidak ada perbedaan signifikan antar kelompok (p>0,05). Kesimpulan Kombinasi deferiprone dan ekstrak etanol buah Mahkota Dewa tidak dapat menurunkan kadar Fe di organ ginjal.

.....Introduction Iron overload is common in thalassemia patients, leading to kidney damage and impaired function. Chelation agents like deferiprone are used to reduce iron levels, but can cause side effects such as neutropenia. Therefore, natural chelators like “Mahkota Dewa” are needed. This study aims to assess the effectiveness of a combination of deferiprone and ethanol extract of “Mahkota Dewa” fruit in reducing Fe levels in the kidneys of hemosiderosis model rats with minimal side effects. Method Sprague-Dawley male rats were divided into six groups: Normal (N), Negative Control (KN), Deferiprone (D), Ethanol Extract of “Mahkota Dewa” Fruit 100 mg/kgBB (PM), Combination of PM and Deferiprone dose of 462.5 mg/kgBB (DPM-1), Combination of PM and Deferiprone dose of 231.2 mg/kgBB (DPM-2). Except N, all groups were induced with 15 mg/x iron for 8 weeks. Treatments were administered for 5 weeks. Kidney Fe levels were measured using Atomic Absorption Spectrometry (AAS). Results Results showed that DPM-1 increased Fe, while DPM-2 did not significantly reduce Fe levels compared to KN but increased Fe levels less than deferiprone. Initial data were not normally distributed, then transformation allowed and Shapiro-Wilk test showed the data was normally distributed (p>0.05). Oneway ANOVA showed no significant differences between groups (p>0.05). Conclusion The combination of deferiprone and “Mahkota Dewa” did not significantly reduce kidney Fe levels.