

Pengembangan Formula Tablet Cepat Hancur Donepezil Hidroklorida Menggunakan Metode Molding = Formulation Development of Donepezil Hydrochloride Fast Disintegrating Tablet Using Molding Method

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Abstrak

Tablet donepezil hidroklorida merupakan salah satu sediaan farmasi untuk terapi Alzheimer yang cukup sering dialami oleh geriatri. Namun, kesulitan menelan tablet pada pasien geriatri seringkali menjadi kendala terapi yang menyebabkan ketidakpatuhan obat. Oleh karena itu, pada penelitian ini dibuat formulasi tablet cepat hancur (TCH) donepezil hidroklorida yang segera hancur di rongga mulut sehingga lebih mudah ditelan. Tujuan penelitian ini adalah mengembangkan formula TCH donepezil hidroklorida dengan metode molding. Formula TCH donepezil hidroklorida dibuat dengan beberapa konsentrasi sodium starch glycolate (SSG), yaitu 0 % (F1), 2 % (F2), dan 4% (F3) dengan metode molding. TCH donepezil hidroklorida yang dihasilkan dievaluasi yang meliputi pengujian organoleptis, waktu hancur, waktu pembasahan, disolusi, penetapan kadar, dan scanning electron microscopy (SEM). Hasil penelitian menunjukkan bahwa TCH donepezil hidroklorida terbentuk bulat sempurna, berwarna putih, dan memiliki rasa manis, waktu pembasahan sekitar 1,22 - 5,13 menit, nilai perolehan kembali sekitar 94 - 115%, rata-rata jumlah obat terdisolusi sekitar 81,65% - 99,73%, hasil SEM menunjukkan tablet yang berongga. Selain itu, TCH donepezil hidroklorida formula 2 dan 3 yang dibuat memenuhi persyaratan, karena memberikan hasil uji waktu hancur 5,13 menit $\pm$ 0,88 (F1), 1,26 menit $\pm$ 0,74 (F2), dan 1,22 menit $\pm$ 0,52 (F3). Dari hasil penelitian ini, disimpulkan bahwa TCH F3 menunjukkan hasil terbaik dalam pengujian.

.....Donepezil hydrochloride tablet is one of the pharmaceutical dosage form for Alzheimer's therapy which is quite common in geriatrics. However, difficulty swallowing tablets in geriatric patients is often an obstacle to therapy that causes drug non-adherence. Therefore, in this study a formulation of donepezil hydrochloride fast disintegrating tablets (FDT) was prepared which disintegrates immediately in the oral cavity so that it is easier to swallow. The aim of this study was to develop a donepezil hydrochloride TCH formula using the molding method. The donepezil hydrochloride FDT formula was prepared with several concentrations of sodium starch glycolate (SSG), namely 0% (F1), 2% (F2), and 4% (F3) by molding method. The donepezil hydrochloride FDT produced was evaluated which included organoleptic tests, disintegration time, wetting time, dissolution, assay, and scanning electron microscopy (SEM). The results showed that the donepezil hydrochloride FDT formed was perfectly spherical, white in color, and had a sweet taste, wetting time was around 1.22 - 5.13 minutes, the recovery value was around 94 - 115%, the average amount of drug dissolved was around 81.65% - 99.73%, the SEM results showed the tablet was porous. In addition, donepezil hydrochloride FDT formula 2 and 3 complied with the requirements, because it gave disintegration time test results of 5.13 minutes $\pm$ 0.88 (F1), 1.26 minutes $\pm$ 0.74 (F2), and 1.22 minutes $\pm$ 0.52 (F3). From the results of this study, it was concluded that FDT F3 showed the best results in the test.