INTISARI

Mutiarawati, A., 2016, OPTIMASI FORMULA *ORALLY DISINTEGRATING TABLETS* GLIMEPIRID MENGGUNAKAN KOMBINASI SUPERDISINTEGRAN *SODIUM STARCH GLYCOLATE* DAN KOMPONEN *EFFERVESCENT* DENGAN METODE *FACTORIAL DESIGN*, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA.

Glimepirid merupakan antidiabetes golongan sulfonilurea yang digunakan untuk terapi diabetes mellitus tipe II.Dosis terapi awal yatiu 1 – 2 mg satu kali sehari dan dapat ditingkatkan menjadi 4 mg perhari untuk pemeliharaan.Dosis terapi glimepirid yang kecil menjadikan glimepirid berpotensi sebagai kandidat sediaan*orally disintegrating tablets* (ODTs). Glimepirid dibuat dalam sediaan *orally disintegrating tablets*(ODTs) sehingga tablet dapat hancur cepat dalam rongga mulut tanpa membutuhkan tambahan air yang selanjutnya diharapkan dapat memberikan efek terapi dalam waktu yang lebih cepat. Tujuan dari penelitian ini yaitu untuk mengoptimasi pengaruh kombinasi *sodium starch glycolate* dan komponen *effervescent* yang memiliki fungsi sebagai bahan penghancur terhadap sifat fisik tablet dan pelepasan obat dengan metode *factorial design.*

Penelitian dilakukan menggunakan metode optimasi *factorial design* 2^2, dengan faktor yaitu *sodium starch glycolate* dan komponen *effervescent*. Tablet dibuat dengan metode kempa langsung dan dilakukan pengujian terhadap sifat fisik serbuk dan tablet serta pelepasan obat. Penentuan formula optimum dengan *superimposed counterplot* menggunakan *Design Expert 9.0.6 trial version* berdasarkan parameter kekerasan, kerapuhan, waktu hancur, waktu pembasahan, dan jumlah obat yang dilepaskan selama 1 menit.Hasil penelitian menunjukkan bahwa komponen *effervescent* berpengaruh lebih dominan terhadap penurunan waktu hancur dan jumlah pelepasan obat dari tablet glimepirid dibandingkan *sodiun starch glycolate*.Berdasarkan *superimposed counter plot* diperoleh formula optimum tablet dengan *sodium starch glycolate* sebesar 3,27 mg dan komponen *effervescent* sebesar 6,00 mg.

Kata kunci : ODTs, glimepirid, *sodium starch glycolate*, komponen *effervescent, factorial design.*

ABSTRACT

Mutiarawati, A., 2016, OPTIMIZATION THE FORMULA OF GLIMEPIRIDE ORALLY DISINTEGRATING TABLETS USING COMBINATION SUPERDISINTEGRANT SODIUM STARCH GLYCOLATE AND EFFERVESCENT COMPONENTS BY FACTORIAL DESIGN METHOD, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY, SURAKARTA.

Glimepiride is a sulfonylurea antidiabetic which it used to treatment of type II diabetes mellitus. Initial dose of glimepiride is 1 to 2 daily and may be increased to 4 mg daily for maintenance. Glimepiride was the drug of choice because of its low dose. Glimepiride orally disintegrating tablets (ODTs) was formulated to reach faster disintegration time in the oral cavity without water needed and furthermore it was intended to give rapid therapeutic action. The aim of this research is to optimize the influence of combination sodium starch glycolate and effervescent components which have function as disintegrant, toward physical properties and drug release with factorial design method.

Orally disintegrating tablets were prepared by direct compression method and it was evaluated for physical properties of powder and tablet, and drug release. Optimization the formula was carried out by 2^2 factorial design method with sodium starch glycolate and effervescent component as independent variables. Optimum formula was determined by superimposed counter plot using sofware Design Expert 9.0.6 trial version based on tablets properties i.e hardness, friability, disintegration time, wetting time, and amount of drug release during 1 minute. This research was found that effervescent components was the most dominant factor had an affect on disintegration time and amount of drug release than sodium starch glycolate. Enhancement effervescent components affected on increase disintegration time of tablet and decrease amount of drug release. Based on superimposed counter plot, optimum formula was achieved with combination sodium starch glycolate 3,27 mg and effervescent components 6,00 mg.

Keywords: ODTs, glimepiride, sodium starch glycolate, effervescent components, factorial design.