INTISARI

APRILIANA, ENDANG WAHYU, 2013, OPTIMASI TABLET *SUSTAINED RELEASE* SALBUTAMOL SULFAT DENGAN MATRIKS HPMC DAN NA-CMC DENGAN METODE *SIMPLEX LATTICE DESIGN*, SKRIPSI, UNIVERSITAS SETIA BUDI, SURAKARTA

Salbutamol sulfat adalah agonis beta-2 adrenergik yang secara luas digunakan dalam pengobatan asma dan penyakit paru obstruktif. Salbutamol sulfat memiliki t ½ elimininasi yang pendek yaitu 2,7 jam serta dosis pemakaiannya adalah 2mg – 4mg diberikan secara peroral tiga sampai empat kali sehari. Berdasarkan hal tersebut, dilakukan penelitian tentang pembuatan tablet lepas lambat salbutamol sulfat menggunakan matriks HPMC dan Na-CMC. Formulasi sediaan lepas lambat diharapkan dapat menghasilkan konsentrasi obat dalam darah yang lebih seragam dan kadar puncak yang tidak fluktuatif.

Penelitian ini dibuat berdasarkan metode *simplex lattice design* (SLD) dengan dua komponen matriks yaitu HPMC dan Na-CMC. Penelitian ini dibuat dalam tiga formula antara lain: FI (100% HPMC), FII (50% HPMC : 50% Na-CMC), FIII (100% Na-CMC). Tablet dibuat secara granulasi basah. Granul dan tablet yang terbentuk lalu diuji mutu fisik. Parameter yang digunakan untuk persamaan SLD adalah waktu alir, daya serap air, kompaktibilitas, dan disolusi. Kemudian dihitung dengan menggunakan design expert 8.0.6.1 untuk menentukan formula optimum. Hasil teoritis dan percobaan formula optimum dianalisis menggunakan uji t.

Hasil penelitian menunjukkan bahwa salbutamol sulfat dapat dibuat sediaan lepas lambat, dan kombinasi matriks HPMC dan Na-CMC berpengaruh terhadap mutu fisik tablet serta pelepasan salbutamol sulfat. Proporsi yang menghasilkan tablet lepas lambat salbutamol sulfat dengan mutu fisik yang optimum adalah formula yang mengandung HPMC 77,2% dan Na-CMC 22,8%.

Kata kunci : Salbutamol sulfat, lepas lambat, HPMC, Na-CMC

ABSTRACT

APRILIANA, ENDANG WAHYU, 2013, OPTIMIZATION SUSTAINED RELEASE TABLET OF SALBUTAMOL SULFAT WITH HPMC AND Na-CMC MATRIX BY SIMPLEX LATTICE DESIGN METHOD, THESIS, SETIA BUDI UNIVERSITY, SURAKARTA

Salbutamol Sulphate is a beta-2 agonist adrenergic that is widely used in the treatment of asthma and obstructive pulmonary disease. Salbutamol Sulphate is a short acting bronchodilators which have short biological half life about 2,7h and the usage is 2mg-4mg, administered orally three to four times a day. Based on that, study is concerned on the manufacture of salbutamol sulphate tablets using HPMC and Na-CMC matrix. Sustained release formulation is expected to produce in the concentration of drug in the blood that is more uniform and the peak levels do not fluctuate.

This study was based on the method simplex lattice design (SLD) with two matrix components, they were HPMC and Na-CMC. The research was made in three formulas are: FI(100% HPMC), FII(50% HPMC: 50% N-a-CMC), FIII(100% Na-CMC). The tablets were made by wet granulation. Then obtained granules and tablets were tested their physical quality. The parameters used for SLD equation was flow rate, absorption, compactibility, and dissolution. Then calculated the response using design expert 8.0.6.1 to determine the optimum formula. The results of theoretical and experimental optimum formula were analyzed using t-test.

The results showed that salbutamol sulfat sustained release could be made to be sustained release preparation and the combination of HPMC and Na-CMC matrix affected the physical quality and the release of salbutamol sulfat tablet. The proportion that produced sustained release salbutamol sulfat tablet with a maximum physical quality was the formula containing HPMC 77,2% dan Na-CMC 22,8%.

Keywords : Salbutamol sulfat, sustained release, HPMC, MC