ABSTRACT

EFFECT OF ERYTHROPOIETIN CONCENTRATION ON *IN VIVO* EFECTIVITY FROM ERYTHROPOIETIN ALGINATE MICROSPHERES

(Ionotropic Gelation Method Using Aerosolization Technique)

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Erythropoietin is used for anemia therapy in patient with kidney failure. Nowadays, it is known that erythropoietin has neuroprotectant activity on animal with Parkinson's disease. However, injectable Erythropoietin which administered by narrow frequency can reduce patient's comfort. In this study, erythropoietin alginate microspheres were made to reduce the administration frequency of erythropoietin and to determine the effect of erythropoietin concentration on its in vivo effectiveness. The microspheres were made using potassium alginate polymer, crosslinked $CaCl_2$, and erythropoietin with concentration 5.000, 10.000, and 30.000 unit by ionotropic gelation method with aerosolization technique.

In vivo effectivity is known from locomotor activity, percentage of reticulocyte, and glutathione peroxidase activity. The results of this study indicated that the increasing concentration of erythropoietin in erythropoietin alginate microsphere had no significant effect on its in vivo effectiveness as neuroprotectant such as locomotor activity and glutathione peroxidase activity. However, erythropoietin alginate microspheres that containing 5.000 unit erythropoietin can increase percentage of reticulocyte compared with control positive group.

Keywords : Erythropoietin-alginate, microsphere, neuroprotector, MPTP, glutathione peroxidase.