

ABSTRACT

**EFFECTIVITY OF ALFA ERYTHROPOIETIN
BETWEEN FIXED-DOSE AND ADJUSTMENT-DOSE
IN CHRONIC KIDNEY DISEASE PATIENT WITH HEMODIALYSIS
(Study in Hemodialysis Unit of Bhayangkara Hospital)**

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Anemia is a common complication in chronic kidney disease (CKD) patient with hemodialysis. The main cause of anemia is deficiency of erythropoietin, as the result of renal damage as an erythropoietin producent. The most appropriate of anemia management in CKD with hemodialysis is by giving Erythropoiesis Stimulating Agent (ESA) or erythropoietin (Epo). Epo effectiveness is influenced by the type and dosage of Epo, the route and frequency of administration, as well as some of the conditions that influence such as an infection or inflammation, absolute and functional iron deficiency and malnutrition. Targeted therapy can be achieved when the dose administered in accordance with the needs of patients that is based on the patient's weight.

The purpose of this study is to determine differences on achievement of Epo alfa administration of fixed-dose compared to adjustment-dose on patients with CKD anemia with hemodialysis after 4 weeks administration. This study is an observasional and prospective method that was conducted on April – Oktober 2016. Inclusion criteria of this study were patient diagnosed with stage 5 CKD and performed regular Hemodialysis at least for 3 months, with Hb level < 10g/dL with enough iron status ST > 20% and FS > 200ng / mL, and has signed the informed concent. All sample was devided in two groups, one group received fixed-dose therapy with 3000 IU subcutaneous erythropoietin twice a week every after dialysis, and the other group received the adjustment-dose of 40 IU/kg/weight. Blood sampel was taken in pre-treatment and post-treatment after 4 weeks of erythropoetin therapy. The measurement parameter were haemoglobin and haematocrit level.

There were 20 patients in this study (10 patients in the fixed-dose group and 10 patients in the dose-adjustment). After the treatment, the mean of haemoglobin level for fixed-dose group was 0.69 ± 0.63 g/dL ($p=0.008$), and the adjustment-dose group was 1.09 ± 0.82 g/dL ($p=0.002$). The mean of haemoglobin level for fixed-dose group was 23.2 ± 2.72 g/dL ($p=0.004$), and the adjustment-dose group was 4.02 ± 2.63 g/dL ($p=0.001$). The result showed that 70% patient performed increase of Hb level on fixed-dose group and 90% patient on adjustment group. The fixed-dose group showed the increase of haematocrit level for about 60% patient and 80% patient on adjustment group. There were no significant different for Hb ($p=0.224$) and Hct ($p=0.256$) targets after 4 weeks of alfa erythropoietin therapy in this study.

Keuwords : Epo, erythropoietin, alfa erythropoietin, foxed-dose, adjustment-dose, CKD with anemia, hemodialysis