THE KOREAN SOCIETY OF NEPHROLOGY
APCN & KSN 2024
June 13(Thu) - 16(Sun), 2024 Coex, Seoul, Korea
Promoting Sustainable Kidney Health: The Asia-Pacific and Beyond

Abstract Submission No.: A-1390

High Malondialdehyde Predicts Inadequate Erythropoietin Therapeutic Response in Regular Hemodialysis Patients

Gede Wira Mahadita, Yenny Kandarini, I Gde Raka Widiana, Nyoman Paramita Ayu, I Gusti Ngurah Agung Tresna Erawan
Department of Internal Medicine-Nephrology, Nephrology and Hypertension Division, Faculty of Medicine Udayana University, Prof. IGNG Ngoerah General Hospital, Denpasar-Bali, Indonesia

Objectives : Anemia is the most prevalent chronic CKD consequence, especially in hemodialysis (HD) patients. Poor cardiovascular outcomes are linked to high morbidity and mortality rates resulting from anemia in CKD-HD. Erythropoietin's poor therapeutic response in HD patients may be due to chronic inflammation and oxidative stress. This study aimed to assess the influence of oxidative stress as measured by MDA level on EPO therapy responsiveness in regular HD patients.
Methods : The study constructed a prospective cohort design. Stratified random sampling was used to choose regular HD patients at Prof Ngoerah General Hospital, Denpasar-Bali, Indonesia between the ages of 18 and 60 who had never had cancer, sepsis, or bleeding and had not had a PRC or intravenous iron transfusion in the previous three months. Lipid peroxidase produces malondialdehyde (MDA), quantified in ng/ml by the MDA-586 technique. Maintenance phase failure of EPO treatment was characterized by Hb values below 10-12 g/dl for three months.
Results : This study included 80 patients (39 (38.8%) men and 41 (51.2%) women) with an average age of 49.79(13.95) years. The sample was divided into two groups based on median MDA levels (994,445) ng/ml: high (³994,445) and low (<994,445). There were no significant differences in age, transferrin saturation (Tsat), hepcidin, and EPO dose between patients with high and low MDA. Inadequate treatment response was observed in 67.5% of the high MDA group and 35% of the low MDA group, according to bivariate chi-square analysis (RR = 1.93; p = 0.004; CI = 1.22–2.09). Logistic regression generates regression coefficient (B)= OR (ExpB)=3,85; p=0,04; (1,53-9,75) 95%CI. Y=-0,619+1,350 (MDA) = 0,731. At high MDA (MDA ≥ 994.445), y=0.731 indicates a 68% likelihood of an inadequate treatment response ($1/1+e^{-(0.731)}$).
Conclusions : High MDA predicts inadequate EPO therapeutic response in regular HD patients