

## 무뇨 혈액투석 환자의 조혈제 치료 반응에 대한 예측인자로 혈액학적 지표 및 펩타이드 표지자의 유용성

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### Usefulness of Hematologic Indices and Circulating Peptide Markers in Predicting Responsiveness to Erythropoietin Therapy in Anuric Hemodialysis Patients: An Explorative Study

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**Purpose:** We tried to find markers related to early detection of responsiveness to erythropoietin therapy which can lead hemodialysis patients to shortened anemic periods.

**Materials and Methods:** We weekly measured blood levels of hepcidin-25, IL-6, CRP, ferritin, iron, total iron capacity, hemoglobin, and reticulocyte count in 10 anuric hemodialysis patients with stable iron storage, for 4 weeks of erythropoietin therapy (darbepoetin- $\alpha$ , 0.4  $\mu\text{g}/\text{kg}$ , weekly). All the patients had gone through one-month erythropoietin-free periods just before initiation of the therapy.

**Results:** Four of the ten patients were responders, defined as the hemoglobin level increases by more than 1.0 g/dL for 4 weeks. The increase of reticulocyte count at one week of the therapy showed statistically significant difference (median delta reticulocyte count ( $\mu\text{L}$ ): 55846.5 in the responder group vs. 30526.0 in the non-responder group,  $p=0.010$ ). But the difference of the plasma hepcidin-25 level at one week of the therapy had little statistical meaning (median delta hepcidin-25 (ng/mL): 757.7 in the responder group vs. 1036.7 in the non-responder group,  $p>0.05$ ). Other markers including transferrin saturation had little relations with the changes of hemoglobin level. The plasma hepcidine-25 levels sharply decreased at one week of the therapy and had remained the same through 4 weeks in both groups. Correlations between the plasma hepcidin-25 and inflammatory markers such as IL-6 and CRP were not found.

**Conclusions:** Reticulocyte count at one week of erythropoietin therapy may be an early predictor of responsiveness in anuric hemodiaysis patients. The circulating hepcidin rapidly decreased with erythropoietin therapy, but did not differ over the responsiveness.

**Key Words:** 빈혈, 혈액투석, 망상적혈구

Anemia, Hemodialysis, Reticulocyte