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코호트 혈액 투석 환자의 빈혈을 치료하는데 있어 적절한 혈색소 농도

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The Optimal Hemoglobin Target in Anemia Treatment of a Cohort Hemodialysis Patients

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Objective: Anemia is a major concern with mortality in patients on mainteinance hemodialysis (HD) patients. Recently the target hemoglobin (Hb) level is known as 11-12 g/dl. But we have no our own Korean guideline. The objective of this study was to investigate the association between Hb level with mortality in a cohort and to define the optimal Hb target.

Methods: This study was a multicenter, prospective observational study of mainteinance HD patients, performed at a cohort composing 10 western dialysis clinics in Seoul, between 2006 and 2011. The exclusion criteria were as follows: history of malignancy; decompensated congestive heart failure; recent myocardial infarction or unstable angina within the preceding 3 months; unambullatory functional status; decompensated liver cirrhosis; and recent infection requiring admission during enrollments. Among 512 patient, total 252 were included in this study.

During study period, Hb, iron indices, albumin, creatinine, calcium, phosphorus, and spKt/V were accessed at every 6 months interval. Maximum 3 consecutive repeated measures in each quarter (6-month interval) were averaged to obtain one quarterly mean value. The Hb was devided into 5 goups (≤10 g/dl, 10-11 g/dl, 11-12 g/dl, 12-13 g/dl and >13 g/dl). We analyzed the odd ratio of mortality according to Hb group, adjusting demographic data and various laboratory values. Multivariate statistics were carried out with the SAS, version 9.1.

Results: Among 252 patient, 65 patients were dead during study period. Mortality odd ratio to the reference category (10-11 g/dl) from unadjusted model were: 3.46 for ≤9 g/dl*, 1.59 for 9-10 g/dl, 2.82 for 11-12 g/dl*, 2.20 for 12-13 g/dl and 0.96 for >13 g/dl. After adjusting demographic data and Kt/v, mortality odd ratio to the reference category (10-11 g/dl) were: 4.87 for ≤9 g/dl*, 2.22 for 9-10 g/dl*, 2.99 for 11-12 g/dl*, 3.17 for 12-13 g/dl* and 0.90 for >13 g/dl. Mortality odd ratio in fully adjusted model were: 2.73 for ≤9 g/dl, 2.32 for 9-10 g/dl*, 3.38 for 11-12 g/dl*, 3.46 for 12-13 g/dl* and 1.31 for >13 g/dl. (*p value <0.05)

Conclusion: Hb level 10-11 g/dl was related with the lowest risk of mortality except Hb >13 g/dl. This result was not coincided with international guideline. Even through we cannot define the optimal Hb level through this study, the larger interventional trials are warranted for the optimal Hb target for Korean HD patients in the future.

Key Words: 혈색소농도, 사망율, 혈액투석
Hemoglobin, Mortality, Hemodialysis