SU-D41

혈액 투석환자에서 Darbepetin-α와 Epoetin-α의 Erythropoiesis 효과의 비교 : 무작위 교차 연구

울산대학교 의과대학 서울아산병원 내과

이지영 · 변승운 · 여영선 · 장재원 · 양원석 · 김순배 · 박수길 · 이상구 · 박정식

Comparison of Erythropoiesis Efficiency between Darbepoetin-α and Epoetin-α in Hemodialysis Patients : Randomised Crossover Study

Jiyoung Lee, Seungwoon Byun, Youngsun Yeo, Jai Won Chang, Won Seok Yang
Soon Bae Kim, Su-Kil Park, Sang Koo Lee and Jung Sik Park

Departement of internal medicine, Asan Medical Center, University of Ulsan College of Medicine

Background : The recently developed erythropoiesis- stimulating agent (ESA) darbepoetin- α (DA) has a 2- 3 fold longer half- life than epoetin- α (EA), permitting darbepoetin- α to be administered less frequently for the long- term treatment of renal anemia. However, the effect of DA on erythropoietic response has not yet been well evaluated.

Purpose : We aimed to compare the erythropoietic effects of DA (60ug IV weekly, conversion rate to EA=200:1) with those of EA (4000 IU SC thrice a week).

Methods : Thiry five hemodialysis (HD) patients with hemoglobin (Hb) ≤ 11.0 g/dL were enrolled and randomly assigned to DA group or EA group after 2 weeks washout period. Enrolled subjects had transferrin saturation > 30%, iPTH <300 pg/mL, and hs- CRp<1.0 mg/dL. We administered ESA and measured Hb biweekly until Hb > 11.0 g/dL (peak Hb). When plasma Hb reached more than 11.0 g/dL, we discontinued ESA and measured Hb biweekly. When Hb level decreased ≤ 11.0 g/dL again, we switched to alternative ESA and repeated the rest steps.

Results : Thirty patients (M:F=17:13, age 64.6 (49~80) years, Kt/V 1.68, nPNA 1.133 g/Kg/day) completed this prospective randomized cross- over study. No significant differences were observed for baseline parameters including Hb, reticulocyte count, erythropoietin (EPO) level, parathyroid hormone, hs- CRP and transferrin saturation between DA group and EA group. No significant difference between EA group and DA group was observed for any measured parameter except EPO level. When the patients' Hb approached to more than 11.0 g/dL, EPO level in DA group was significantly higher than that in EA group (25.1±8.4 mIU/mL in EA vs. 219.6± 62.5 mIU/mL in DA, p<0.001). However, erythropoietin resistance index, 10.5 in EA group was not significantly different from 11.1 in DA group. The follow- up periods after peak Hb level without ESA until Hb ≤ 11.0 g/dL again were not significantly different (4.1 weeks in EA group vs. 3.7 weeks in DA group, p=NS).

Conclusion : Although EPO level was definitely higher in DA group, compared with that in EA group, there was no significant differences in parameters relevant to erythropoiesis in both two groups. These findings may indicate that the half- life of ESA is not a major determinant in the erythropoietic response in hemodialysis patients.

Key Words : 빈혈, 조혈 자극제, 말기신부전
End stage renal disease, Erythropoiesis stimulating agent