The effect of intravenous Iron therapy on haemoglobin level and optimization of erythropoietin therapy in haemodialysis patients

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Abstract

Background&Objective: Decrease in production of erythropoietin has been noted as one of the main factors causing anemia in ESRD patients, and administration of recombinant human erythropoietin (rhEPO) has been used to correct the anemia. Iron deficiency, including functional iron deficiency, limits the efficacy of rhEPO therapy in ESRD patients. This study examined the effects of maintenance intravenous iron sucrose (Venofer) on haemoglobin level and, optimization of erythropoietin therapy.

Materials&Methods: Forty eight haemodialysis patients with haemoglobin level<9 gr/dl who were dialyzed three times weekly went under the study. Two thousands units of rhEPO were given subcutaneously at the end of each dialysis for seven weeks. At the end of the seventh week, those with haemoglobin level<9 gr/dl and with ferritin level <200 ng/dl (29 patients) were chosen for intravenous administration of 100 mg Venfor during the next five consecutive haemodialysis while maintaining the rhEPO dose at 2000 units with each dialysis. A week after the last dose of Venofer, haemoglobin and serum ferritin were determined.

Results: Average haemoglobin level among the patients before administration of rhEPO was 7.5 gr/dl. After seven weeks of subcutaneous rhEPO at 2000 units with each haemodialysis, the average haemoglobin level raised to 8.5 gr/dl. The effect of maintenance IV Venofer was an increase in average haemoglobin level to 10.4 gr/dl. The same effect was seen on the ferritin level. The ferritin level of 131 ng/dl increased to 237 ng/dl a week after last dose of IV venofer.

Conclusion: Intravenous (IV) iron improves haemoglobin response and, thus, optimizes rhEPO therapy.

Key Words:
Venofer- Erythropoietin- Haemoglobin- Ferritin- Haemodialysis- end-stage renal disease (ESRD)