Parenteral Iron during Hemodialysis

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Dear Sir,

Iron administration is a well-established treatment for iron deficiency and iron loss in hemodialysis (HD) patients [1, 2]. When oral iron preparations are not tolerated, not absorbed, or when iron stores should be filled rapidly at the beginning of an erythropoietin therapy, intravenous iron is indicated. The aim of this study was to find out whether intravenous iron can be removed by HD and if it must be given at the end of dialysis or at any time.

Five HD patients (No. 1-5) who were being treated with intravenous iron gave their informed consent. Iron levels were determined in serum and dialysate before and immediately after injection of 100 mg of iron (Ferrum vitis) into the venous line of the dialysis system (table 1). HD clearance of iron

was calculated from serum iron levels in the arterial (Ca) and venous (Cv) line of the dialysis system by the formula:

$HD \text{ clearance } d^{act} \times Q \times (Ca - Cv) / Ca$

where Q = blood flow. There was a rapid rise in iron levels in the arterial line after injection of iron. However, there was no significant difference across the dialysator, no rise in iron in the dialysate, and iron clearance by HD was very low even immediately after injection. Even in 1 patient with hemofiltration (No. 6), iron did not increase in the filtrate immediately after intravenous injection.

From these results we concluded that intravenously administered iron during HD is not removed in the dialysator presumably because of protein binding. Iron can be given intravenously without loss at any time of HD. Thus, we can inject iron during a routine visit and need not be called by the nurse at the end of dialysis.

References

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Heineke G, Finke K, Konner K, Rath K, Schulz E: Zur Frage der Wirksamkeit einer oralen Eisensubstitution bei Dauerdialysepatienten. Klin Wochenschr 1974;52:979-982.

Table 1. Intravenous iron during HD