

Pharmacy Based Dosing of Darbepoetin: a randomized controlled trial in hemodialysis patients

F.J. van den Oever¹, C.F.M. Heetman-Meijer¹, E. Birnie^{2,3}, Y.C. Schrama⁴

¹Department of Clinical Pharmacy, Franciscus Gasthuis, Rotterdam, ²Department of Statistics, Franciscus Gasthuis, Rotterdam; ³Institute of Health Policy and Management, Erasmus University, Rotterdam; ⁴Department of Nephrology, Franciscus Gasthuis, Rotterdam

Abstractnumber: INT-012

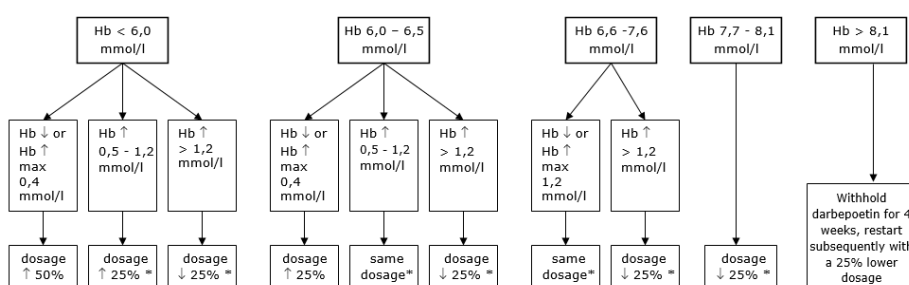
Background

Erythropoietin analogues and intravenous iron supplementation are used to treat anemia in hemodialysis patients. Treatment guidelines suggest a target range for hemoglobin levels in hemodialysis patients of 6.8 to 7.4 mmol/l. Before start of the study, 23% of all hemodialysis patients in our hospital had hemoglobin levels within target range. In this study, we investigated if pharmacy-based dosing of darbepoetin was more effective in reaching target hemoglobin (Hb) levels than physician-based dosing.

Methods

- Single-center randomized, controlled trial
 - n=2x100
- Inclusion criteria
 - All hemodialysis patients treated with darbepoetin
- Follow-up of 13 months per patient
- Intervention group
 - Development of a treatment algorithm based on guidelines, summary of product characteristics, and expert opinion
 - Monthly dosing advice regarding darbepoetin and intravenous iron sucrose by a pharmacist
- Control group
 - Dosing of darbepoetin and intravenous iron sucrose as usual (by nephrologist only)
- Analysis
 - Exclusion of 15 patients as prespecified in the protocol
 - SPSS, non-parametric tests (Mann-Whitney)

Treatment algorithm for darbepoetin dosage



* unless there is an increase of > 0,4 mmol/l Hb despite prior dose reduction: in that case withhold darbepoetin for 4 weeks, restart subsequently with a 25% lower dosage

Results

Figure 1. Proportion of hemoglobin levels within target range (median 23.1% vs 38.5%, p=0.001)

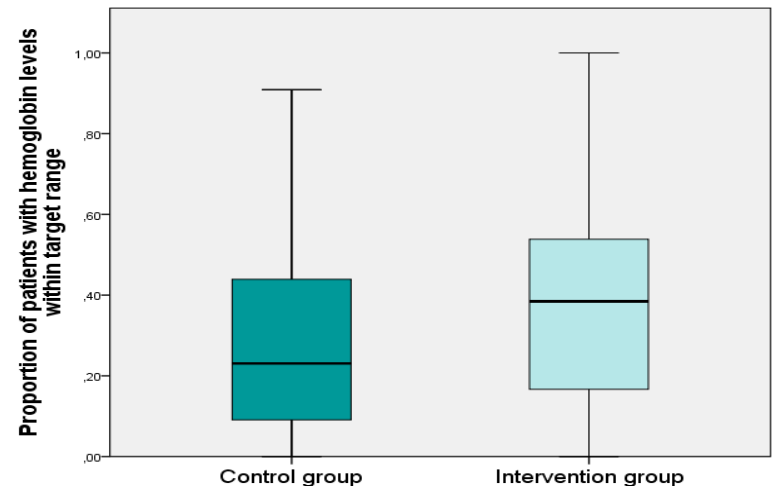


Table 1. Secondary endpoints (median)

Parameter	Intervention group	Control group	P value
Hb > 8.1 mmol/l	0.0%	7.7%	0.034
TSAT ≥ 20% and ferritin 200-500 mcg/l	21.1%	8.3%	0.003

Darbepoetin dosage per patient in the intervention group was 13 mcg/week lower than in the control group.

Conclusions

In hemodialysis patients, pharmacy-based dosing of darbepoetin and iron sucrose increases the percentage of patients within target range for hemoglobin levels as well as with adequate iron storage.

Discussion

The increase in percentage of hemoglobin levels within target range was not as high as expected, probably due to the high frequency of infections.

Contact

c.meijer@franciscus.nl