

LOW LEVELS OF SERUM FERRITIN WITH MODERATE LEVEL OF TRANSFERRIN SATURATION MAINTAINS ADEQUATE ANEMIA CONTROL IN HEMODIALYSIS PATIENTS TREATED WITH DARBEPOETIN ALFA

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INTRODUCTION AND AIMS

Excessive iron induce the production of oxidative stress and Hepcidin25 (Hep25) decreasing the efficiency of iron use. We reported that low levels of serum ferritin(s-ft) and moderate levels of transferrin saturation (TSAT) lead to good prognosis in haemodialysis (HD) patients treated with erythropoiesis-stimulating agents (ESA) (Am J Nephrol 2014). In order to evaluate the effect that the iron status led to good prognosis gave for anaemia treatment in HD patients received darbepoetin alfa (DA), we examined the relationships among s-ft, TSAT and the data associated anemia.

METHODS

- 132 outpatients on maintenance HD were followed for 5 years (Tab. 1).
 - We measured haemoglobin (Hb) twice a month, and s-ft and TSAT monthly.
 - The targeted Hb level was 10-11 g/dL, according to Japanese guidelines.
- We picked up data of every 6 month for analysis.
- The data used DA (n=1079) were categorized into four groups by s-ft and TSAT according to our study (Am J Nephrol 2014)(Tab. 2).
- Hep25 was measured by LC-MS/MS assay on the one point during this study(n=108).
- The data associated anaemia and Hep25 were compared among the groups.
 - One-way analysis of variance or the Kruskal-Wallis test H-test
- The interaction among the Hb level, s-ft, TSAT and Hep25 was analyzed.
 - linear regression model.

RESULTS We showed the summarizing data in Figure 1 and 2.

Fig. 1. The data were compared among the groups.

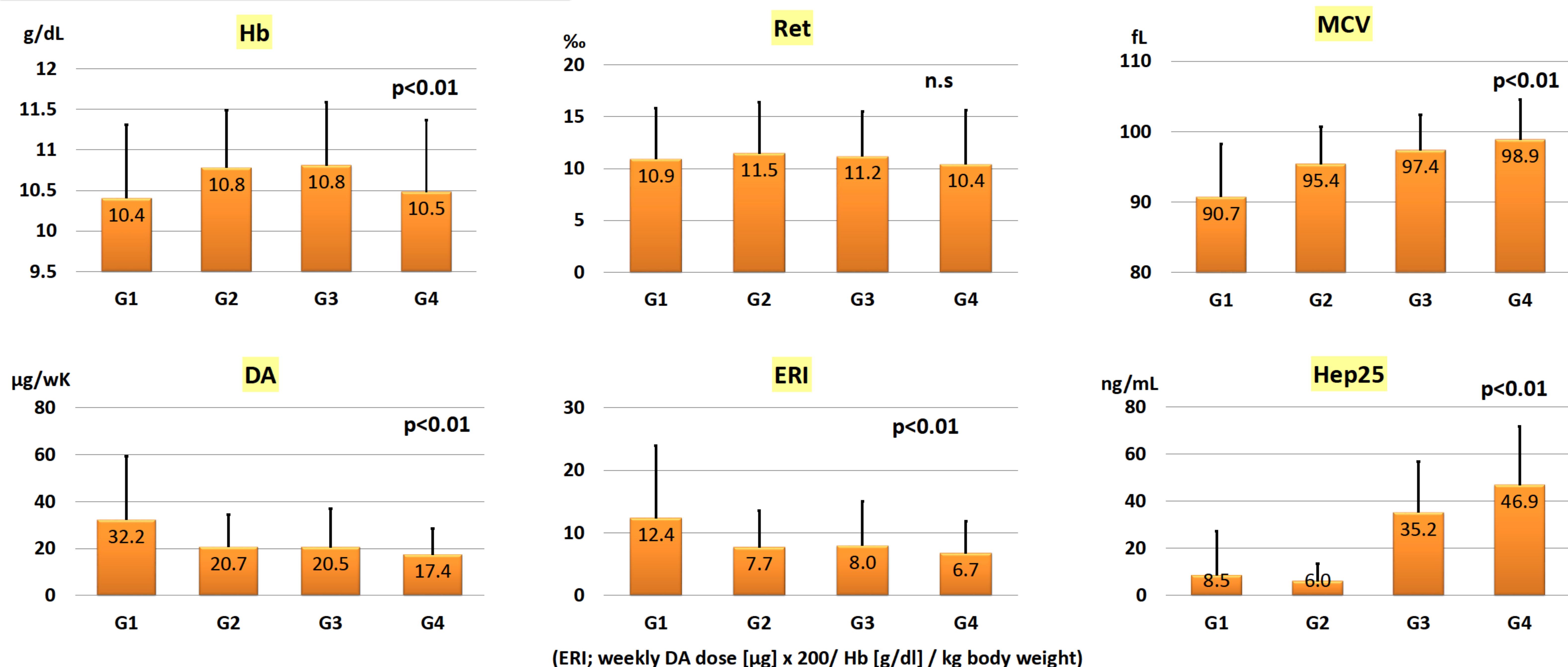
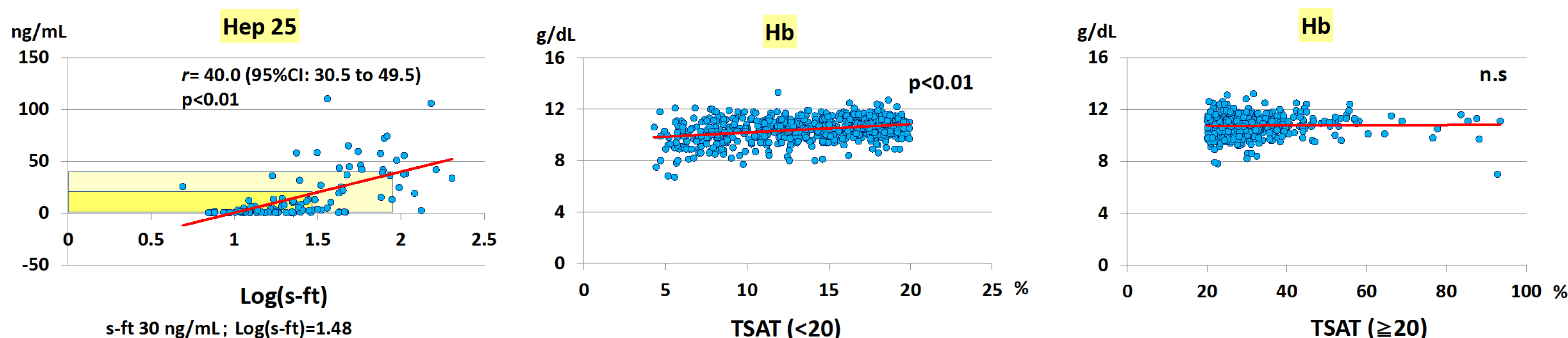


Fig. 2. Linear regression models



CONCLUSIONS

Our data indicated that low s-ft and TSAT levels of $\geq 20\%$ associated with good anaemia control and Hep25 elevated easily as increasing of s-ft in HD patients received DA. The adequate iron status for anaemia control might be lower than that established previously for these patients as same as the value for prognosis.

Tab. 1. Baseline characteristics

Age(yerars)	58.4±12.6
HD duration (years)	10.7±7.5
Men(%)	66.7
Diabetes (%)	24.2
Kt/V (single pool)	1.38±0.18
s- Alb (g/dL)	3.8±0.3
CRP * (mg/dL)	0.05 [0.02-0.15]

*:median[interquartile range] (mean±SD)

Tab. 2. The category of groups

group	G1	G2	G3	G4
TSAT(%)	<20	≥20		
s-ft (ng/mL)		<30	30-80	>80
n	567	224	201	87

Tab. 3. The data of s-ft and TSAT by groups

group	s-ft (ng/mL)	TSAT (%)
G1	28.3±26.7	13.2±4.3
G2	18.7±6.0	29.7±11.1
G3	47.4±13.3	31.4±11.5
G4	127.6±53.6	28.7±9.7

(mean±SD)