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Higher Hematocrit at Dialysis Initiation is Associated with Lower Erythropoietin Dosing in the First Nine Months of Dialysis

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Few studies have shown the relationship between pre-dialysis hematocrit (Hct) and erythropoietin (EPO) dosing, Hct levels, and iron therapy after dialysis initiation. We studied EPO-treated 1998 incident hemodialysis (HD) and 1995-1998 peritoneal dialysis (PD) patients who had a Hct value reported in the HCFA 2728 Form at dialysis initiation. Included patients (N=12,791 HD, N=599 PD) survived the first 9 months of dialysis, had at least one EPO claim each month, and were on HD or PD consistently for the 9-month period. Hct, EPO, and intravenous (IV) iron data were obtained from the national 1995-1999 Medicare claims data. Patients were grouped according to Hct at dialysis initiation: <24%, 24-<27%, 27-<30%, 30-<33%, 33-<36%, and \geq 36%, with the latter two groups combined into \geq 33% for PD. For each initial Hct group, we computed the following mean values across months 1-9: Hct, EPO dose per week (EPO/wk), and number of iron vials per month (iron/mo).

Mean % Hct/iron vials per mo/EPO dose per wk	Initial Hct (selected groups)	Month 1	Month 3	Month 5	Month 7	Month 9
HD	<24%	28.1/1.6/14,777	32.6/3.2/18,403	33.7/2.9/17,440	33.8/2.8/16,960	33.8/2.7/16,548

	≥36%	32.8/1.6/10,752	33.8/2.9/13,111	34.5/2.9/12,882	34.5/2.6/13,120	34.5/2.5/13,011
PD	<24%	27.0/0.4/10,128	31.4/0.4/7,560	31.7/0.3/6,607	31.0/0.3/6,063	31.4/0.3/6,516
	≥33%	33.0/0.1/6,407	34.3/0.1/5,163	33.7/0.1/5,941	34.4/0.3/5,477	33.3/0.2/5,835

For HD, mean Hct increased until about month 4, while monthly Hcts were higher and EPO/wk was lower for groups with higher initial Hcts; there was a less consistent pattern with IV iron use. For PD, EPO/wk was consistently lower in each Hct group at month 9 than month 1, but overall, there were inconsistent patterns in Hct and iron use. Our study shows that higher pre-dialysis Hct levels were associated with lower EPO doses (HD and PD) and lower IV iron usage (HD) after dialysis initiation. This data would suggest that higher pre-dialysis Hct levels were associated with consistently lower EPO and iron utilization after dialysis initiation.