

Red blood cell distribution width as a prognostic marker of mortality in patients on peritoneal dialysis

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Background

Red blood cell distribution width (RDW) is recognized predictor for all cause mortality in patients on hemodialysis. In this study, we assessed whether RDW was associated with all-cause mortality in patients on peritoneal dialysis (PD).

Patients and Methods

From January 2007 to January 2014, 58 patients were treated with PD at the Presbyterian medical center. Of these, we included 54 patients who had more than 1 year follow-up period, and performed a retrospective analysis of demographic, biochemical parameters, and patient outcomes. Following one-year, all-cause mortality was evaluated.

Results

Table 1. The clinical and laboratory findings of the 54 patients with peritoneal dialysis

	Patients (N=54)
Age, years	56 ± 12
Male, n (%)	33 (62.3)
Duration of dialysis, month	21.8 ± 17.7
Other disease, n (%)	
Diabetes	23(43)
Hypertension	31 (57)
Dead, n (%)	5 (9)
RDW (%)	13.99 ± 1.62
Hemoglobin (g/dL)	8.57 ± 1.87
Platelet (10 ³ /mL)	207 ± 77
Albumin (mg/dL)	3.26 ± 0.60
CRP (mg/dL)	1.50 ± 2.17

Table 2. Comparison of clinical characteristics between survivor and non-survivor

	Survivor (N=49)	Non-survivor (N=5)	p-value
Age, years	55 ± 12	65 ± 14	NS
Male , n (%)	29 (59)	4 (80)	NS
Other disease, n (%)			
Diabetes	20 (41)	3 (60)	NS
Hypertension	28 (57)	3 (60)	NS
RDW (%)	13.84 ± 1.62	15.42 ± 0.73	< 0.01
Hemoglobin (g/dL)	8.51± 1.87	9.20 ± 1.92	NS
Platelet (10 ³ /mL)	207 ± 76	205 ± 96	NS
Albumin (mg/dL)	3.32 ± 0.58	2.64 ± 0.40	< 0.01
CRP (mg/dL)	1.54 ± 2.23	1.16 ± 1.69	NS

Table 3. Multivariate logistic regression analysis

	B	Relative risk	95% CI Lower	Upper	P value
Albumin	-3.032	0.48	0.003	0.668	0.024
RDW	0.922	2.51	1.069	5.909	0.035

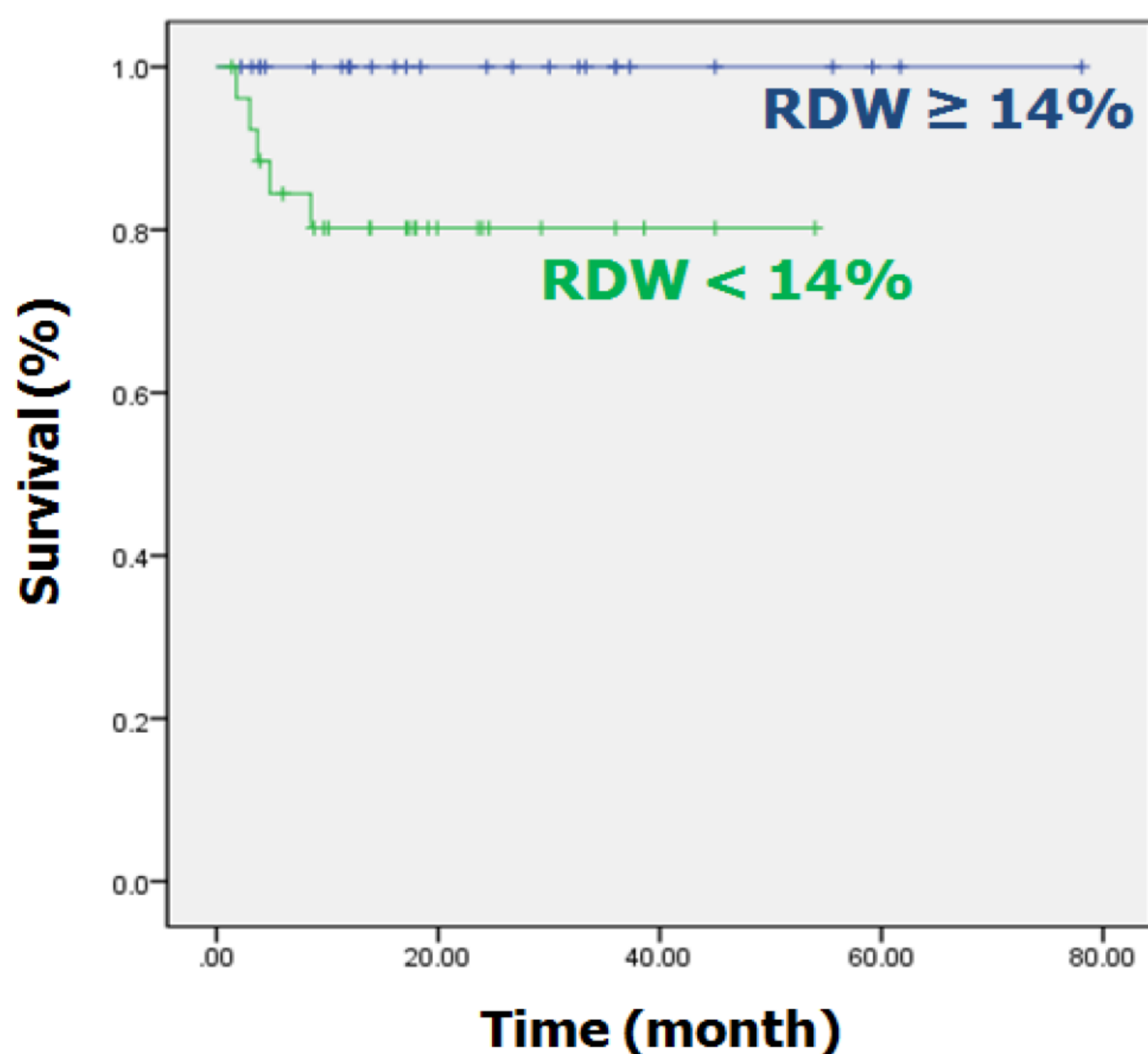


Figure 1. Kaplan-Meier survival curves according to red blood cell distribution width (RDW) values above or below the RDW median (14.%)

Summary and Conclusion

RDW and serum albumin at starting on PD were independent risk predictors for 1 year all-cause mortality in this study. RDW could be an additive predictor for all-cause mortality in patients on peritoneal dialysis.

