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**The study of circuit survival during continuous renal replacement therapy**

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**Objectives:** CRRT is a useful dialysis modality in hemodynamically unstable patients. But despite use of anticoagulants, clotting of CRRT circuit frequently occurs, which reduces the efficiency of dialysis. In the study, we aim to investigate the clinical factors contributing to CRRT circuit clotting.

**Methods:** We retrospectively investigated the medical records of total 119 critically ill patients requiring CRRT. We investigated the clinical factors affecting the time from CRRT start to first dialysis circuit clotting, and the proportion of dialysis circuit changes due to clotting to total circuit changes during entire CRRT periods.

**Results:** The time to first circuit clotting had a negative correlation with norepinephrine dosage ( $r = -0.335$ ,  $p = 0.002$ ) and serum creatinine level ( $r = -0.402$ ,  $p < 0.001$ ), while it had a positive correlation with serum corrected calcium concentration ( $r = 0.370$ ,  $p < 0.001$ ). In multiple regression analysis, it was confirmed that high serum creatinine and low serum calcium contributed to circuit clotting (Table). During entire CRRT periods, the proportion of dialysis circuit changes due to clotting was well negatively correlated with the time to first circuit clotting ( $r = -0.460$ ,  $p < 0.001$ ), and total duration of CRRT application ( $r = -0.306$ ,  $p = 0.006$ ). However, neither transfusion nor CRRT parameters such as blood flow and filtration fraction had no relationship with circuit survival.

**Conclusions:** Conclusively, in regard to CRRT circuit lifespan, high serum creatinine and low serum calcium levels were associated with CRRT circuit clotting.

Multiple regression analysis on the time to first CRRT circuit clotting

	Model	B	Std. Error	Beta	t	p value
2	(Constant)	- 27.689	16.534	-	- 1.675	.098
	Serum Ca	6.451	1.676	0.397	3.849	0.000
	Serum Cr	- 2.935	1.145	- 0.264	- 2.563	0.012

Std: standard; Ca: calcium; Cr: creatinine