



During citrate-based Continuous Renal Replacement Therapy (CRRT), an infusion of calcium is necessary to replace the calcium lost in the effluent. The replacement takes place through a central venous catheter (CVC) that is primed with saline solution” Roveri et al (2018).

Abstract:

During citrate-based Continuous Renal Replacement Therapy (CRRT), an infusion of calcium is necessary to replace the calcium lost in the effluent. The replacement takes place through a central venous catheter (CVC) that is primed with saline solution. Thus, we hypothesized a potential systemic anticoagulation because of unchelated citrate reaching the patient at the start of CRRT because of 0.42 ml of line dead space. In this pilot study, two subpopulations of 7 patients who underwent Continuous Veno-Venous Hemodiafiltration (150 ml/min of blood flow, 1500 ml/h dialysate, 1500 ml/h of citrate predilution) were studied. One had the CVC primed with saline, the second with calcium chloride. Calcium replacement rate was 6.3 ± 0.2 ml/h. Ionized calcium concentration was studied over time in the two groups, in the group with saline priming we detected a transient period of hypocalcemia (ionized calcium concentration < 1.00 mmol/L for the first 2 hours). In the subpopulation with the calcium priming, this was not present. No significant effect on filter life emerged. Priming of the catheter with calcium seems effective in avoiding a potential issue regarding citrate accumulation at the start of CRRT. More studies are needed to assess the clinical significance

of this finding.

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Reference:

Roveri, G., Busana, M., Lusardi, A.C., Ferrari, F., Trevisan, G., Di Girolamo, L., Dei Poli, M. and Resta, M.V. (2018) Calcium Priming of the Central Venous Catheter Prevents a Drop in Ionized Calcium Concentration During Regional Citrate Anticoagulation. *ASAIO Journal*. November 7th. .

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