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Introduction:
The aim of the present study was to evaluate the role of postfilter calcium concentrations (pfCa) in terms of safety and efficacy in large retrospective cohort of patients treated with CVVHD and regional citrate anticoagulation.

Methods:
Retrospective, observational study at a university hospital with 6 ICUs. All patients treated with RCA-CRRT were included in the study.

Results:
Among 1070 patients treated with RCA-CVVH pfCa at the start of the CVVHD was available in 987 pts. The pfCa concentrations were in target range (0.25-0.35 mmol/L) in the majority of patients (70%), whereas 17% and 13% of patients had the pfCa below or above the target range, respectively. In the further 72h of CVVHD treatment the proportion of patients with targeted pfCa increased to 86% and remained stable (Figure 1). At the start of the RCA-CVVHD there was a significant but weak correlation between the pfCa and ionized systemic Ca (iCa) with a Spearman rank-order correlation coefficient (rho) of 0.374 (p < 0.001) (Figure 2). The coefficient of variation of pfCa concentrations was significantly higher if compared to the coefficient of variation of iCa concentration (Figure 2). Using per protocol adaptations the incidence of a sever hypocalcämie (<0.9 mmol/L) was low and present only at first 12 hours of therapy: 4% and 2% of patients with pfCa below the target range and 0.7% and 0.4% of patients with pfCa in target range, at 0h and 12h respectively (p<0.001). There was no correlation between pfCa concentrations and filter lifetime.

Conclusion:
The results of the present study support the previous reports about higher measurements variation of pfCa compared to systemic iCa (1). Nevertheless due to the weak correlation of iCa and pfCa as well as a low number of patients with a severe metabolic complication, the results of our study question the necessity of intensive pfCa monitoring during RCA-CRRT. Present results need to be validated in further trials.

References: