



The aim of this experimental study was to investigate if the position of CVC and CVDC influences the elimination of infused drugs, during continuous renal replacement therapy (CRRT)” Frithiof et al (2018).

Abstract:

In intensive care, drugs are commonly administered through central venous catheters (CVC). These catheters and central venous dialysis catheters (CVDC) are often placed in the same vessel for practical reasons. The aim of this experimental study was to investigate if the position of CVC and CVDC influences the elimination of infused drugs, during continuous renal replacement therapy (CRRT). In a randomized, cross-over model, anesthetized piglets received both a CVC and a CVDC in a jugular vein. Another CVDC was placed in a femoral vein for comparison. After baseline measurements, CRRT was performed in either of the CVDC, each CRRT-period separated by another baseline period. Hypotension was induced by peripherally given sodium nitroprusside. In the CVC, both gentamicin and noradrenaline were administered. Noradrenaline was titrated to reach a target blood pressure. When CRRT was performed using the CVDC in the same vessel as the drugs were infused, the plasma concentration of gentamicin was reduced compared with when the infusion and CVDC were in different vessels (5.66 vs. 7.76 [SD ± 2.30] mg/L [p = 0.02]). The noradrenaline infusion rate needed to reach the target blood pressure was more than doubled (0.32 [SD ± 0.16] vs. 0.15 [SD ± 0.08] µg/kg/min [p = 0.006]). This experimental study indicates that the removal of

drugs is increased if infusion is in close vicinity of the CVDC, during CRRT.

Reference:

Frithiof, R., Bandert, A., Larsson, A., Lipcsey, M. and Smekal, D. (2018) Central Venous Line and Dialysis Catheter Position Affects Drug Clearance during Continuous Renal Replacement Therapy in an Animal Model. ASAIO Journal. May 29th. .

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