

“We analyzed data from 1039 patients treated by hemodiafiltration over a 21-month period where access blood flow (Qa) measurements were also available at baseline.” Ponce et al (2014).

Reference:

Ponce, P., Marcelli, D., Scholz, C., Wehmeyer, W., Gonçalves, P., Grassmann, A., Brand, K. and Canaud, B. (2014) Does the extracorporeal blood flow affect survival of the arteriovenous vascular access? Hemodialysis International. November 6th. .

Does extracorporeal blood flow affect survival of arteriovenous vascular access?
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Abstract:

Hemodiafiltration with high-convective volumes is associated with improved patient survival, whereby practical realization is contingent on high extracorporeal blood flow (Qb) and dialysis treatment time. However, Qb is restricted by vascular access (VA) quality and/or concerns that high Qb could damage the VA. Taking VA quality into consideration, one can investigate the relationship between Qb and VA survival. We analyzed data from 1039 patients treated by hemodiafiltration over a 21-month period where access blood flow (Qa) measurements were also available at baseline. VA failure was defined as a surgical intervention resulting in the generation of a new VA. Qa was included as a stratification variable within a Cox regression model. A second Cox proportional hazard model with a penalized spline was used to describe the association between Qb and VA survival. Compared with Qb in the 350-357 mL/min range, a significantly higher hazard ratio (HR) for VA failure was detected for fistula only, and then only for Qb < 312 mL/min (HR: 2.361, 95% confidence interval : 1.251-4.453), Qb = 387-397 mL/min (HR: 1.920, 95% CI: 1.007-3.660) and Qb >414 mL/min (HR: 2.207, 95% CI: 1.101-4.424). Age, gender, diabetes, VA vintage, position of the VA, and arterial pressure were not significantly associated with outcome. The form of the penalized spline confirmed higher risk for VA failure for the lowest and the highest values of Qb. Taking Qa into consideration, no association was found between VA failure and Qb up to flows as high as approximately 390 mL/min.

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