



Intravenous literature: Thomson, P., Stirling, C., Traynor, J., Morris, S. and Mactier, R. (2010) A prospective observational study of catheter-related bacteraemia and thrombosis in a haemodialysis cohort: univariate and multivariate analyses of risk association. *Nephrology Dialysis Transplantation*. 25(5), p.1596-604.

Abstract:

BACKGROUND: Central venous catheterization is a fundamental component in delivering haemodialysis yet is associated with significantly higher complication rates than other methods of vascular access. In this study, we report results of univariate and multivariate analyses designed to identify and quantify independent risk association for catheterization type, clinical variables and laboratory variables with regard to the development of catheter-related bacteraemia (CRB) and catheter failure due to poor haemodialysis flow.

METHODS: A 2-year prospective study of all incident haemodialysis vascular access catheter insertions was conducted. Laboratory and clinical variables were recorded at catheter insertion, and the clinical course was followed up to the point of catheter removal. CRB and catheter failure due to poor flow were recorded as outcome events. Univariate and multivariate analyses were used to test for association between clinical and laboratory variables and outcome.

RESULTS: Forty-four thousand five hundred seventy-six catheter days were accumulated over the study period. Multivariate analysis demonstrated an independent association between

non-tunnelled catheterization procedures and adverse outcomes compared with tunnelled central venous catheter insertions. Elevated modified Charlson comorbidity score was independently associated with the development of CRBc. Elevated C-reactive protein and low haemodialysis blood pump flow were independently associated with catheter failure due to poor flow.

CONCLUSIONS: The data demonstrate that tunnelled central venous catheter insertions have an association with lower complication rates than non-tunnelled central venous catheter insertions that is independent of whether patients have acute or chronic renal failure, or high levels of comorbidity.

