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A Meta-analysis of randomized clinical trials blood flow and stenosis surveillance of hemodialysis access

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Objectives : Regular vascular access blood flow (Qa) surveillance is recommended to detect graft or fistular stenosis. However, published studies have reported conflicting results of its utility that led healthcare professionals to doubt the benefits of this surveillance method. We find to access blood flow monitoring lowers the risk of AV access thrombosis or stenosis and that the outcomes differs between arteriovenous(AV) fistular (AVF) and arteriovenous graft (AVG)

Methods : We performed a systematic review of the available literature according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. An electronic search was conducted using the MEDLINE, EMBASE, and Cochrane Library databases from 1980 to 2017 for 9 RCTs involving dialysis access blood flow measurement. All studies combined included a total of 981 patients with hemodialysis vascular access of whom 649 had AVF and 332 had AVG.

Results : The estimated overall pooled risk ratio (RR) of thrombosis was 0.782 (95% confidence interval [CI], 0.553 to 1.107) favoring access blood flow monitoring. The pooled RR of thrombosis were 1.104 (95% CI, 0.672 to 1.816) in the AVG group. However, In AVF subgroup, the pooled RR of thrombosis statistically significant decrease surveillance group 0.562 (95% CI, 0.346 to 0.915)

Conclusions : The benefit of AV access surveillance using access blood flow monitoring to lower the risk of thrombosis is uncertain in AVG group. But, using access AVF surveillance is effective method in hemodialysis patients.

Keywords : Hemodialysis access, surveillance, Arteriovenous fistular , Arteriovenous graft