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Role of renal vascular coordinator on access flow dysfunction: A quality improvement initiative on improving patency rate and reducing urgent interventions

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Objectives : Maintaining the functionality and minimising flow dysfunction of arteriovenous fistula (AVF) or arteriovenous graft (AVG) are critical components for sustaining long-term haemodialysis (HD) in patients with end-stage kidney disease (ESKD). The role of a renal vascular coordinator (RVC) is novel in Singapore. An RVC is a single point-of-contact allied health professional in the early detection and timely intervention of flow dysfunction. In Khoo Teck Puat Hospital (KTPH), RVC performs access ultrasonography assessment and assists in reviewing direct referrals about dysfunctional AVF/AVG from community dialysis centres and plans for appointments with interventional nephrologists and vascular surgeons.
Methods : We conducted a prospective study from April 2020 to December 2022 to evaluate the referral-to-intervention time (RIT) and patency rate (PR) of dialysis access interventions. Ninety-three patients were referred to the RVC and offered thrombectomy or angioplasty. Twenty-seven patients were excluded from the analysis (did not require intervention (9), admitted without RVC assessment (13), defaulted (4), or bypassed an RVC appointment to their first intervention (1)).
Results : The mean time from referral to their first RVC visit was 5.07±5.28 days. The mean RIT (6 for thrombectomy and 87 for angioplasty) was 17.63±28.08 days (8.6% within 48 hours). The 6-month and 12-month post-intervention PR was 70.9% and 61.3%, respectively. Fifty-one of the remaining ninety-three patients had previous procedures done to their AVF before April 2020 without RVC involvement. The RIT was 8.92±11.27 days (28.6% within 48 hours, p=0.036). 6.5% versus 21.5% of patients were admitted for urgent interventions (p=0.007). The 6-month and 12-month post-intervention PR for these non-RVC interventions was 28.6% (p<0.00001) and 0% (p<0.00001), respectively.
Conclusions : A single point-of-contact coordination by RVC to manage flow dysfunction could improve vascular access outcomes and reduce unnecessary urgent interventions.