

Abstract**Multi-Disciplinary Care Approach and Pre-Operative Vascular Mapping Can Improve Arteriovenous Fistula Outcomes in Chinese Hemodialysis Patients**Ip CH¹, Ma WK¹, Lam YC¹, Fung KS², Cheung FK¹¹Division of Urology, Department of Surgery²Division of Nephrology, Department of Medicine & Geriatrics, Princess Margaret Hospital, Hong Kong Sar, China**Introduction:**

Arteriovenous fistula (AVF) is the gold standard of vascular access for hemodialysis patients. Multi-disciplinary initiatives involving integrated care by urologists, nephrologists and renal nurses together with pre-operative brief sonographic vascular mapping by urologists have been introduced since January 2011 at Princess Margaret Hospital (PMH) in Hong Kong. The purpose of this study is to compare the AVF outcomes before and after implementation of these initiatives.

Materials and Methods:

This study included 64 AVFs which were created in 57 Chinese patients in 2010 (n=31) and 2011 (n=33) at PMH. Demographic characteristics, surgeons' expertise level, operative details and pre-operative sonographic vascular mapping data (arterial and venous diameters) were retrospectively reviewed. Primary patency (PP), assisted primary patency (APP), secondary patency (SP) rates and complication rates were compared between two years.

Results:

There existed 30 & 29 radio-cephalic AVFs and 1 & 4 brachio-cephalic AVFs in 2010 and 2011 respectively. The mean follow-up duration was 13.2 months (3 – 30months). Surgeons' expertise level was similar in two years and did not correlate with AVF patency and complication rates. The mean operation duration was significantly shorter in 2011 (1.64 hours vs 1.93 hours, p=0.007). The primary failure rate (12.1% vs 41.9%, p=0.007) and overall complication rate (35.5% vs 77.4%, p=0.001) were significantly lower in 2011. PP, APP and SP rates at 3 months ([84.8%, 84.8%, 87.9%] vs [54.8%, 54.8%, 58.1%]), APP and SP rates at 6 months ([80.0%, 83.3%] vs [53.3%, 56.7%]) and PP and APP rates at 9 months ([70.4%, 73.1%] vs [40.0%, 46.7%]) were all significantly higher in 2011 (p<0.05). For radio-cephalic AVFs created in 2011, the mean documented sonographic arterial and venous diameters were 2.61mm (n=13) and 2.18mm (n=10) respectively. Subgroup analysis revealed those with arterial diameter ≥ 2.5mm had significantly higher PP and APP rates at 9 months than those <2.5mm ([85.7% vs 20%, p=0.023]; [85.7% vs 25%, p=0.044]).

Conclusion:

The AVF outcomes in terms of primary failure, patency and complication rates were significantly improved after introduction of multi-disciplinary care approach and pre-operative sonographic vascular mapping. These initiatives should be carried on and widely promoted in various hospitals with hemodialysis facilities.