

AB035. 242. Measuring what matters—a 5-year study of factors predicting arteriovenous fistulae outcomes

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Background: Arteriovenous fistulas (AVF) are the preferred method of access for patients undergoing haemodialysis. Over half of AVFs are non-functioning 4 years post-formation, however despite the use of vascular imaging prior to fistula formation; the risk factors and aetiology of AVF failure are not clearly defined. We sought to determine the number of AVF failures at our institution over a five-year period, and to determine those factors that might have been used to predict AVF failure.

Methods: Hospital In-Patient Enquiry (HIPE) data and the

prospectively maintained eMed database were used to identify all patients who underwent AVF formation at University Hospital Limerick between October 10th 2012 and October 18th 2017. Analyses of the eMed database, medical charts, and pre-operative imaging were used to identify potential risk factors for failure.

Results: One hundred and seventy patients underwent AVF formation in this time period. A total of 202 AVFs were formed, comprising 80 radiocephalic, 92 brachiocephalic and 30 brachiobasilic fistulas. For all AVFs, patency rates at 1, 2 and 4-year were 68.98%, 61.74% and 51.61%, respectively. Twelve patients had greater than one AVF failure. For all AVF types, pre-operative mean arterial diameter and mean arterial flow rates were lower among failed AVFs.

Conclusions: AVF failure remains a common phenomenon. While pre-operative imaging can help in decision-making, a lack of clarity over those precise measurements that are most likely to predict failure persists. Our study suggests that arterial diameter and flow rate are most predictive of failure, and should be used to guide this decision-making process.

Keywords: Arteriovenous; fistula; outcomes; determinants

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