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**Life Journey of the Arteriovenous Fistula (AVF):
What Evidence Recommends Tourniquet Use at Time of Cannulation?**

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Background: Despite advances in monitoring of arteriovenous fistulas (AVFs), their durability remains compromised by suboptimal patency and high maturation failure rates (Rothuizen, 2013). Tourniquets are essential for determining vascular integrity, from pre-surgical assessment, during AVF creation and right through the life of the access. Yet the practice of tourniquet use at time of cannulation has varied levels of acceptance and compliance within haemodialysis units.

Aim: This literature review aimed to appraise the importance of tourniquets at all stages of fistula life, and to determine the best level of evidence behind recommendation for tourniquet use during AVF cannulation. Additionally, to reveal relevant and significant comment regarding AVF longevity, as may be impacted by tourniquet use or by AVF cannulation without tourniquet application.

Method: Two literature reviews were performed. EBSCO host was utilised to access a total of ten data bases relevant to health, nursing, medicine and health research. On a later occasion, CINAHL, OVID and Medline were accessed for recent sources from 2014.

Results: The literature pertaining to tourniquets, haemodialysis arterio-venous fistulae and cannulation could be divided into five themes: education for AVF care, including cannulation technique; survey studies into cannulation practices; industry guidelines; use of tourniquets pre-AVF creation and a category detailing technical/pathological investigations into fistula flow dynamics as impact upon AVF longevity.

Only one cross-sectional survey of cannulation practices indicated a positive benefit of patient application of pressure at time of cannulation compared to use of no pressure or tourniquet use, to statistical significance (Parisotto et al, 2014).

Where tourniquet application for cannulation was considered, its use was recommended.

Conclusions: Nurses have a prominent role in AVF care throughout access life. With AVF failure rates an ongoing concern, it is surprising that tourniquet use has not been formally investigated as an area of significance within cannulation practice. In highlighting the potential physiological benefit of even light tourniquet application at time of cannulation, the opportunity remains available for further research to identify nurse practice and opinion surrounding tourniquet use.

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