The Shrewsbury and Telford Hospital

CLINICAL GUIDELINES FOR CANNULATION TECHNIQUE OF ARTERIO-VENOUS FISTULAE AND ARTERIO-VENOUS GRAFTS

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1.0 INTRODUCTION

It is well documented that the arterio-venous fistula is the best form of access for haemodialysis, the arterio- venous PTFE graft is the second choice when all the veins suitable for fistula creation have been exhausted. Good renal access is imperative to the continual well being of all renal patients, to give adequate safe clearance and dialysis. Therefore the continual best cannulation technique, care and surveillance must be implemented at all times.

.2.0 AIM / PURPOSE

The aim of this guideline is to give all staff who work at SaTH affiliated renal units clear instruction on the correct cannulation technique, and management of arterio-venous fistula and arterio-venous PTFE grafts.

3.0 OBJECTIVES

The objectives of this are to increase the survival rate of AVF and AV grafts, promote expert cannulation skills, and improve surveillance of AVF and AV grafts, thus reducing salvage and occlusion rates.

4.0 DEFINITIONS USED AVF-arterio-venous fistula AVgraft – arterio-venous graft PTFE –polytetrafluroethylene BH-Button hole VIP- visual phlebitis score

5.0 SPECIFIC DETAIL

Before any cannulation takes place the fistula should be palpated and assessed fully by feeling the 'thrill' at anastomosis and palpating the entire length of fistula orientation. Machine pressures must be observed for low arterial pressures, high venous pressures and prolonged bleeding times post needle removal.

"VIP" score of skin integrity should be documented each dialysis session following SaTH renal Units 'Access VIP scoring tool'.

If button- hole technique is used then follow the BRS Clinical Practice guidelines (2016)

If rope ladder technique, then use whole length of useable segment of fistula moving cannulation site up by approximately 1cm.

Primary nurses are required to perform a "sleeves up" examination at least once a month, to check for aneurysms and collateral veins. This includes assessment of monthly bloods. Any identified problems to be reported to vascular access team and senior nurse.

Cannulation technique

- Take your time making sure that patient's arm is in a comfortable final position before beginning cannulation.
- Good cannulation is achieved in a gentle fluid motion
- Assess the depth during your initial assessment; this will determine your angle of entry.
- Estimate the position of the final tip of needle in fistula before cannulation, particularly important in torturous fistulae.
- Avoid aneurysms unless no alternative site.
- If skin integrity 'shiny' broken, red, and sore or any erythema noted then these areas are to be avoided and reported to vascular access team and senior nurse.
- Avoid area needling with use of rope ladder.
- If unsure of patency of fistula listen to bruit on hand held Doppler. Contact senior nurse or vascular access nurse if concerned, <u>before</u> any attempt to needle fistula is made.
- After 2 unsuccessful attempts at needling fistula/graft please seek advice from experienced member of staff.
- If aneurysmal, do not needle across top of aneurysm unless seen by surgeons

6.0 TRAINING

Staff to complete cannulation assessments within the Chronic Competency Framework and Skills Assessment document for Haemodialysis.

Thus trained and confident in fistulae and graft assessment and cannulation.

7.0 Encourage patients to wash fistula arm before coming into renal unit. Clean fistula or graft with 2% chorhexidine in 70% alcohol allow to dry for 2minutes. If patient allergic to this then use 10% providone lodine in alcohol and allow to dry for 2 mins. As the skin of fistulae and grafts are cleaned several times a week, use only 3 motions over the length of fistula or graft, to preserve skin integrity for the future.

8.0 INSERTION OF NEEDLES

Apply tourniquet- do not over tighten, as damage may occur to brachial artery and fistula, only use enough pressure to secure fistula.

A suitable site for arterial needle should be chosen at least 2.5cms away from anastomosis (this is not the top of the incision scar but the area where the 'thrill' commences). If the arterial needle is to be placed retrograde then allow more distance to allow for the advancing of the needle away from the anastomosis.

- 9.0 Choose suitable gauge needle:
 - 17G only for experienced staff with very narrow fistulae, as very sharp and can cause infiltration more easily.
 - 16G for all new fistulae and brachial axilla upper arm AV grafts. Consider 16G needles for all grafts, the exception being a very long length of graft which may be suitable for needling with 15G needles, after discussion with Vascular Access Nurse.
 - 15G needles only when fistula established and skin integrity is VIP score 0.
 - Blunt needles as per BRS Button Hole Technique for canulation of AVF (2016)

10.0 Insert needle bevel up to allow cutting edge to enter skin first. Watch orientation of needle bevel, avoid turning your wrist, if the bevel enters sideways this may cause cutting of the vessel or sidewall infiltration. Allow a short distance between hub of needle and skin to prevent large scab forming after needle removal (avoiding 'hubbing'). Should any resistance or pain be felt or any swelling noted, then remove needle at same angle as you entered. Press with gauze on cannulated site and slightly above. REMEMBER – there are TWO holes with cannulations, one through the skin and one through the fistula.

DO NOT 'BLEED OR MILK OUT' INFILTRATED FISTULAE.

11.0 Taping of needles should be place in a "X" over the wings of the needle and a third tape placed at start of plastic tubing (just above metal part of needle). Make sure a loop is made before securing rest of blood lines to patients shoulder or pillow. Accommodate patients comfort where every possible.

12.0 AUDIT

RCA of failed access On going assessment of cannulation technique

13.0 REFERENCES

www.fistulafirst.org (18/05/15) VascularAccessSociety<u>http://www.renal.org/guidelines/modul</u> <u>es/vascular-access-for-haemodialysis</u> (18/5/15) Clinical Practice Guidelines and Clinical Practice Recommendations NKF K/DOQ (2006) British Renal Society(2016) Special Interest Group

14.0 CONTRIBUTION LIST

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