BRS 20018 – Plastic Needles

Title: Cambridge experience using plastic needles to cannulate an Arteriovenous Fistula

Background:

Arteriovenous Fistula cannulation can be performed using rope ladder, buttonhole or area technique. Sharp and blunt metal needles are available for routine cannulation and buttonhole technique. Retrospectively, we have a lot of problems for those patients dialysing via brachiocephalic AVF. Some patients who have brachiocephalic AVF is very challenging to cannulate and maintain the position of the needle during dialysis due to their anatomical placement. Slight movement during dialysis can cause infiltration resulting to form clots in the AVF which will result losing the AVF.

Methods:

In 2016, we started using plastic needles for those patients who dialyse via brachiocephalic AVF, restless patients and those with metal allergy. Robust training in cannulation using plastic needles in the clinical area has been implemented by adhering the policy and protocols. The cannula is inserted into the vessel using an introducer metal needle which is removed after the cannulae is pushed inside the vessel wall. Therefore, during the dialysis treatment only the plastic cannulae are inside the vessel wall (both arterial and venous access) without any metal needle. This will allow our patient to move without risking their AVF to get infiltrated or clotted.

Results:

The use of plastic needles reduces the risk of internal wall damage of the AVF or needle infiltration thus prevents losing the AVF and will end up of dialysing the patient using Central Venous Catheter. The costs of plastics needles are very expensive but it will be covered by the United Kingdom best practice dialysis tariff. The Clinical Commissioning Group (CCG) will pay £149 per dialysis session for AVF patient and £118 per dialysis session if the patient is dialysing via Central Venous Catheter.

The dialysis adequacy report, access flow and recirculation study in using plastic needles compared to metal needles are not affected.

References:

Grainer, F., (2016) Plastic (non-metal) fistula cannula: from the concept to practice. Renal Society of Australia Journal. Online [http://www.renalsociety.org/journal/volume-12-no-2/] Accessed 31 January 2018.

United Kingdom – Renal Dialysis best Practice Tariff (2018) Online [https://improvement.nhs.uk/uploads/documents/2017-18\_and\_2018-19\_National\_Tariff\_Payment\_System.pdf]. Accessed 31 January 2018.