Outcomes of Arteriovenous fistulas and grafts are no better with Regional anaesthesia

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BACKGROUND

- Well-functioning Arteriovenous Fistulas (AVF) and Grafts (AVG) are critical for survival of patients suffering from End stage renal disease (ESRD). There are number of factors that determine patency's of AVF/AVG.
- European Vascular Access Clinical Practice guidelines recommendation 18 states " Regional anaesthesia should be considered in preference to local anaesthesia for vascular access surgery because of a possible improvement in acces patency [1]. Studies have shown use of RA causes significant vasodilation and improved short term outcomes in AVF and AVG[2,3].

OBJECTIVE

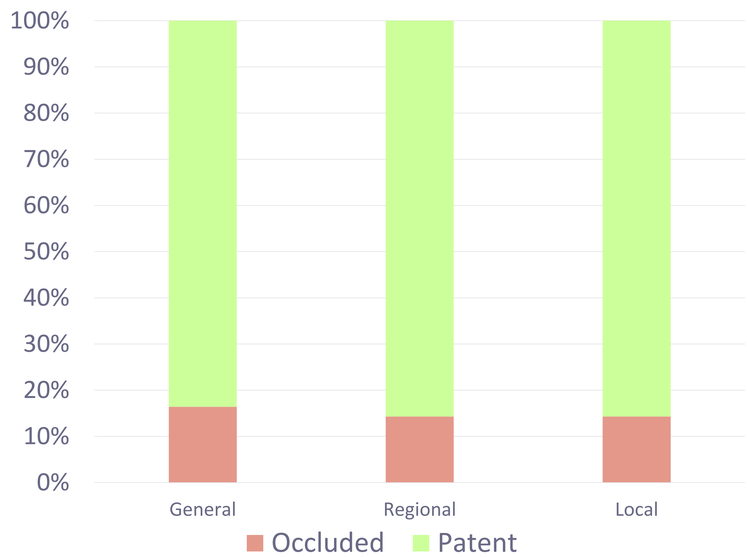
- This study aims to review effect of anaesthesia types – RA, LA and general anaesthesia (GA) on primary patency rates of AVF/AVGs

METHODS

- A retrospective analysis of AVFs and AVGs created from 2017-2019 in one centre
- Anaesthesia by 2 experienced anaesthetists and surgery by 6 access surgeons.
- Post procedural follow up scan at 6-8 weeks
- First post op scan used as surrogate markers to measure short-term patency outcomes

FINDINGS

- 117 renal access procedures done under the 2 named anaesthetists included in the study
- 61 under GA, 7 under LA and 49 under RA



INTERPRETATION

- No difference in patency rate outcomes in the 3 anaesthetic groups at the time of the first scan in the first 6-8 weeks.
- Also noted no difference in outcomes between autogenous fistulas and grafts

DISCUSSION

- Successful AV fistula maturation is influenced by a variety of factors.
- Few studies have investigated the role of peri-operative factors such as type of anesthesia.
- Regional anesthesia is thought to result in better primary patency rates for AV fistulas as it causes significant vasodilatation as a result of sympatholytic effects, specifically an increase in diastolic blood flow and a reduction in peripheral arterial resistance.

CONCLUSIONS

- In this small study, use of recommended RA were not associated with higher primary patency rates.

REFERENCES

- 1 Schmidli J, Widmer M, Basile C, de Donato G, Gallieni M, Gibbons C et al. ESVS Guidelines Reviewers, Mohaupt M, Ricco J and Roca-Tey R,. Editor's Choice – Vascular Access: 2018 Clinical Practice Guidelines of the European Society for Vascular Surgery (ESVS). . Eur J Vasc Endovasc Surg 2018, 55(6), pp.757-818.
- 2 Aitken E, Kearns R, Gaianu L, Jackson A, Steven M, Kinsella J, Clancy M, Macfarlane A. Long-Term Functional Patency and Cost-Effectiveness of Arteriovenous Fistula Creation under Regional Anesthesia: a Randomized Controlled Trial. J Am Soc Nephrol. 2020 Aug;31(8):1871-1882. doi: 10.1681/ASN.2019111209. Epub 2020 Jul 24. PMID: 32709710; PMCID: PMC7460891.
- 3 Ismail A, Abushouk AI, Bekhet AH, Abunar O, Hassan O, Khamis AA, Al-Sayed M, Elgebaly A. Regional versus local anesthesia for arteriovenous fistula creation in end-stage renal disease: a systematic review and meta-analysis. J Vasc Access. 2017 May 15;18(3):177-184. doi: 10.5301/jva.5000683. Epub 2017 May 5. PMID: 28478618.