491

Point of Care Ultrasound leads to improvement in early diagnosis and intervention in Nephrology service provision

Dr Haroon Ayub[1], Dr Mohammad Adbelmahmoud[1], Dr Sarah McCloskey[1], Dr Shalabh Srivastava[1], Dr Rauri Clark[1], Dr Saeed Ahmed[1], Dr James Andrews[1]
[1]*South Tyneside And Sunderland NHS Foundation Trust, Sunderland, United Kingdom*

We have developed a local pathway to facilitate review and maintenance of arteriovenous fistulas using point of care ultrasound (PoCUS). We audited the results of PoCUS surveillance against departmental ultrasound scans and/or fistulograms via our electronic medical record (EMR) system to review what impact the new pathway had on the number of departmental scans performed and how accurate our PoCUS scans were in comparison.

In our trust, we are serving a population of around 300,000 people. There are approximately 250 patients on maintenance intermittent haemodialysis (IHDx) and a similar number in the pre-dialysis service. Dialysis access is commonly referred to as a 'lifeline' for a haemodialysis patient and the arteriovenous fistula (AVF) has long been the preferred access choice .

Duplex ultrasound allows for identification and localization of abnormalities which may potentially impair access function or patency. Stenosis of >50% identified on duplex exam has been correlated with access thrombosis within 6 months, prompt recognition and correction of access abnormalities at early stages may improve longevity and function of AVF. Local provision in our hospital for formal departmental ultrasound assessment of AVF and arteriovenous graft (AVG) for both routine maturation studies and emergent assessment for access dysfunction has fallen in the last few years.

This prompted the our group to develop their own pathway for AVF/ AVG assessment which has been incorporated into the EMR. Four consultants have been locally trained to provide a basic ultrasound fistula assessment which is performed as part of an interventional list running daily monday to friday. Patients are referred by dialysis nurses to our vascular access specialist nurse in the case of access dysfunction. These referrals are triaged and, if appropriate, the patient is scheduled for a PoCUS assessment within 24-48 hours. We also routinely screened all new AVF's with a 'maturation' study at six weeks post creation. We have audited the first three months of data reviewing the indication for ultrasound, the quality of our documentation regarding the ultrasound findings and results. Where the patients had any formal radiology departmental studies in the following three months, we compared and contrasted these results with our PoCUS assessment.

55 scans were performed in the first three months of the novel pathway. Documentation was deemed 'adequate' in 60% of cases. 8 cases of stenosis were detected over the three months, all of which were confirmed on formal departmental ultrasound or fistulogram. A further seven patients had departmental ultrasound studies, all of which also correlated with PoCUS findings. The mean wait time for a departmental ultrasound scan was 25 days. In patients with access dysfunction and stenosis identified on PoCUS, the mean wait time until fistulogram and fistuloplasty was 14.5 days.

This data suggests our PoCUS AVF assessment correlates well with formal departmental studies and leads to shorter waiting time for assessment and intervention in our hospital.