The Renal Association

UK Renal Registry

2014 Multisite Dialysis Access Audit in England, Northern Ireland and Wales

Lay summary

For the full annual report chapters click here or visit https://www.renalreg.org/reports/2015-eighteenth-annual-report/

There are two forms of dialysis for kidney failure, haemodialysis (HD) and peritoneal dialysis (PD). For people treated with haemodialysis, this requires access to a good flow of blood, which can only be achieved in one of three ways: using a fistula, a graft or a neckline. Peritoneal dialysis is quite different and relies on a plastic catheter being placed into the peritoneal cavity which lies with the abdominal cavity through which fluid exchanges are conducted. Fistulas (arteriovenous fistula), grafts (arteriovenous graft), necklines and peritoneal dialysis catheters are all types of 'access' for dialysis. Necklines are further divided into temporary (non-tunneled line-NTL) and semi-permanent lines (tunneled line-TL).

Dialysis access is a topic of interest in kidney care for several reasons. Firstly, certain types of access are associated with fewer complications, for example fistulas, grafts and peritoneal dialysis catheters are less likely to be associated with blood stream infections than dialysis lines. Hence, guidelines promote the use of fistulas and grafts over necklines. It is also important to know how well dialysis access functions since its failure causes considerable problems for patients and is expensive for the NHS. The UK Renal Registry (UKRR) has been conducting the access audit for the last three years.

All 62 adult renal units in England, Wales and Northern Ireland were contacted for information about fistulas, grafts, lines and catheters used in 2014. A response was received from 53 units comprising of 5,429 patients. The contributing renal units are named in the full report chapter. In 2014, 4,339 patients started on haemodialysis and 1,090 on peritoneal dialysis. Amongst all patients starting dialysis, 51% started with a neckline, 28% started with a fistula, 1% started with a graft and 20% started with a peritoneal dialysis catheter. Amongst patients that were already on dialysis prior to 2014, 14,588 were on haemodialysis and 2,235 were on peritoneal dialysis. For every 100 existing dialysis patients, 57 had a fistula, 4 had a graft, 26 had a neckline and 13 a PD catheter. Amongst both new and existing dialysis patients there were fewer using fistulas or PD catheters in 2014 than in 2012. (Figure 1).

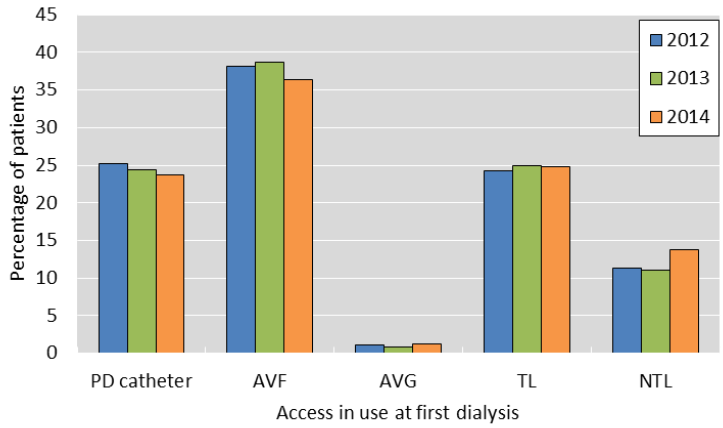

Figure 1 Percentage of patients on dialysis by type of dialysis access 2012 to 2014
AVF = fistula AVG = graft TL/NTL = neckline

The type of access used at three months after starting dialysis gives an important understanding of the responsiveness of the access creation pathway. It is hoped that by three months of dialysis the majority of patients are using definitive access such as a fistula, graft or peritoneal dialysis catheter rather than a neckline. Reassuringly there was a significant reduction in the use of temporary necklines at 3 months: 24 per 100 patients at the start of dialysis down to 1 per 100 after 3 months (Figure 2).

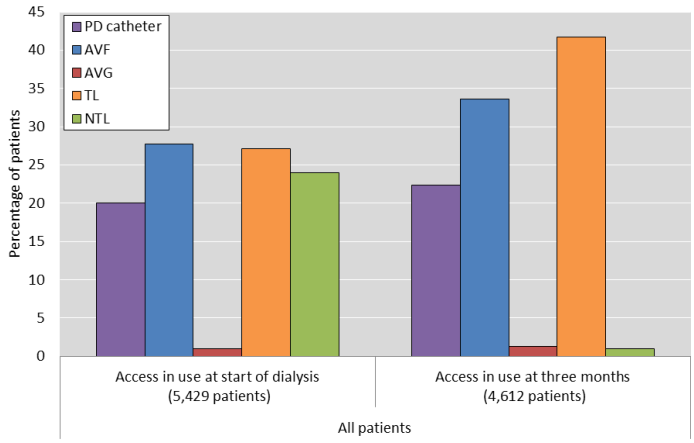

Figure 2 Access in use at start of dialysis and after three months for those still on dialysis
AVF = fistula AVG = graft TL/NTL = neckline

In patients new to dialysis there was a clear relationship between the length of time known to a renal unit and the type of their first dialysis access. For example, if a patient was known to a nephrologist for more than a year before they started dialysis they were more likely to have a fistula in place and useable for their first dialysis. Similarly, the percentage of patients who started with peritoneal dialysis was significantly lower amongst people known to a nephrologist for less than 90 days (Figure 3).

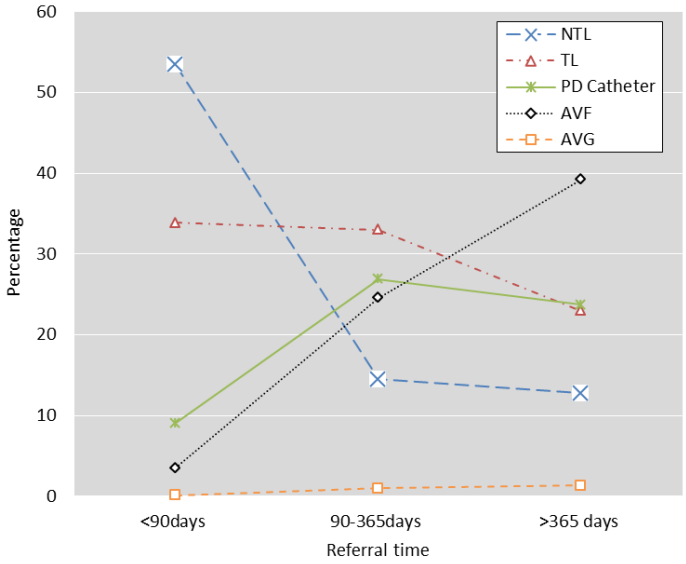

Figure 3 Type of first dialysis access (%) by referral time
AVF = fistula AVG = graft TL/NTL = neckline