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P291 -Use of a Portable Dialysis Machine to facilitate treatment of dialysis-dependent patients on the Intensive Care Unit at University Hospital Southampton NHS Trust

Dr Kirsty Armstrong¹, Dr Susan Tanser¹

¹University Hospital Southampton NHS Trust, Southampton, United Kingdom

BACKGROUND: The 600,000 population of Southampton accounts for almost 25% of the catchment area for Wessex Kidney Centre (WKC) (2.2 million). 28% of the total haemodialysis (HD) population of WKC (WKC) resides within the locality of University Hospital Southampton (UHS). Emergency / elective admission of established HD patients to UHS for specialist services eg cardiothoracic is an increasing occurrence. There has been a further increase in workload since centralisation of vascular services at UHS. These patients require regular dialysis throughout their stay at UHS. Current practice is for HD patients admitted to UHS for specialist treatment, to receive their dialysis via continuous renal replacement therapy (CVVHF) on ITU. Not only does this require insertion of a temporary dialysis catheter but also a prolonged stay in a critical care bed. This is an unnecessary intervention in patients with already established access and thus impacts on patient experience.

PROJECT AIMS: 1) To provide suitable WKC patients established on maintenance HD with an appropriate short-term dialysis regimen rather than using CVVHF; 2) to avoid unnecessary insertion of temporary dialysis catheters in patients who already have established vascular access (fistula, graft or permanent dialysis catheter); 3) to reduce length of stay in a critical care bed and 4), to standardise practice thus ensuring appropriate, efficient, evidence-based treatment is prescribed and delivered, thereby improving patient experience and outcomes.

SOLUTION TESTED: NxStage is a well-established home HD system which is simple, flexible and portable making it ideal for use in stable patients anywhere within the hospital. While it is not routinely used for standard thrice weekly maintenance HD, evidence would suggest that when used for a short period of time, it can provide effective and adequate solute clearance, comparable to dialysis using standard machines. Using a standardised prescription, suitable patients, identified by the renal team were dialysed on the NxStage machine using established vascular access. This service is currently provided on Monday, Wednesday and Friday for 1 patient per day by WKC nurses. An ICU nurse is allocated to assist with monitoring / drug administration etc.

RESULTS: Between March and September, 2018 24 patients have undergone 46 episodes of HD on GICU and CICU. They stay an average of 4 – 6 hours on ICU. There have been no complications recorded to date. Dialysis adequacy as assessed by urea reduction ratio is achieved

CONCLUSION: The NxStage machine is a suitable means of providing adequate dialysis on a short-term basis for suitable patients thus avoiding unnecessary placement of temporary vascaths and a prolonged admission to ITU for CVVHF. The aim is to increase the service to 6 days per week, supported by the 7/7 Consultant-led Renal Service and to roll out the service to other areas of the hospital to allow dialysis "at the bedside" thus preventing the need for a critical care bed. Not only would this improve patient experience but also have a significant cost saving by preventing more than 500 episodes / year of transport costs to the regional unit for dialysis provision.