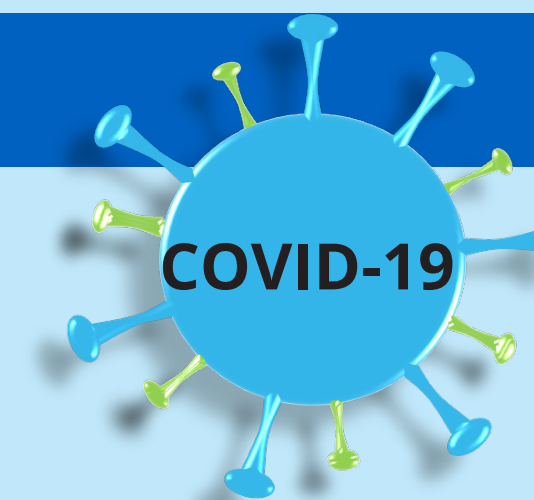


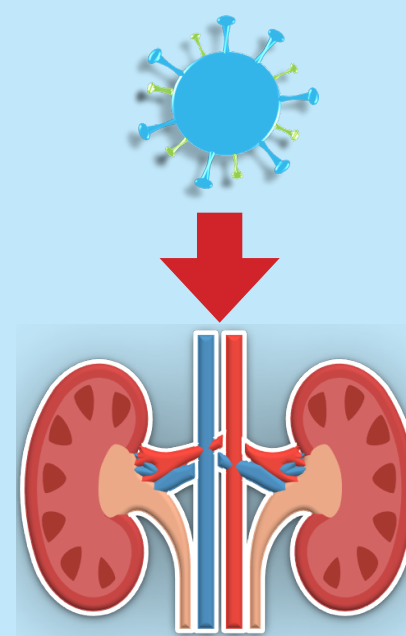
Ian Rechner¹, Ria McMullen¹, Angela Clarke², Bernice Boore², Emma Vaux²

¹ICU, Royal Berkshire NHS Foundation Trust, United Kingdom; ²Berkshire Kidney Unit, Royal Berkshire NHS Foundation Trust, United Kingdom



Background

- Of 800 patients treated annually in our 19 ICU beds (catchment 500,000), 120 require renal replacement therapy (RRT) delivered by Baxter Prismaflex® (continuous veno-veno haemodiafiltration (CVVHDF)).
- With the onset of the COVID-19 pandemic, recognition of a significant increased incidence of acute kidney injury (AKI) requiring RRT and existing intermittent haemodialysis (IHD) patients contracting COVID-19 requiring ICU support raised concerns regarding RRT ICU capacity.
- Alongside was a worrying national shortage of CVVHDF/HDF consumables and new machines to deliver this excess requirement; all critical drivers to seek local solutions for RRT provision beyond usual capability.



Method



- A local kidney unit neighbour described their successful experience trialling the Quanta SC+ in home IHD patients.
- Translation of the Quanta SC+ from home use to safe IHD treatment in ICU was quickly apparent alongside ease of supporting technical infrastructure set up and minimal training requirements.
- Immediate availability and fiscal acceptability of purchasing 4 Quanta SC+ devices and 2 supporting Reverse Osmosis (RO) machines were critical determinants in making IHD a realistic and sustainable solution to desperate RRT shortages.
- Provision of expert technical support and clinical nurse specialist facilitation expedited training of ICU workforce and enabled swift implementation.



Results

- 27 ICU nurses were trained in 3 weeks (23 in 14 days).
- Between 22/04/20 and 17/05/20, 8 patients (range 37-63 yrs, median 53.5; 7/8 known IHD; 1/8 AKI; 7/8 COVID-19 positive) received 20 treatments (1-5/patient) using the Quanta SC+ in ICU.
- An agreed ICU IHD protocol was co-designed gaining consensus in unfamiliar territory of provision of IHD in ICU and differing clinical perspectives in IHD prescription in a critical care setting.



Conclusion



- At a time of unprecedented national shortage of dialysis machines and increased RRT need associated with COVID-19, the **Quanta SC+ provided a safe and effective solution for provision of IHD in ICU.**
- Ease-of-use with **training delivered in <6 hours** enabled ICU nurses to effectively treat patients independent of dialysis nurses, allowing continuity of the chronic HD programme.
- Learning identified importance of training to enable rapid growth of a critical mass of expertise and confidence in an unfamiliar technique, infrastructure and procurement needs, team communication and responsive online and face-to-face support for troubleshooting.