VTE AWARD – GENERAL

Excellent Quality Improvement programme that advanced practice in thrombosis prevention or management

ROYAL STOKE UNIVERSITY HOSPITAL

NHS University Hospitals of North Midlands, Royal Stoke University Hospital embedding an improvement culture to embrace innovation to drive quality improvement that advances clinical practice in post-stroke thrombosis prevention.

The University Hospital of North Midlands is home to one of the UK's most comprehensive stroke units treating around 1,500 stroke patients per year.

Approximately 68% of admitted patients suffer a degree of paralysis, and VTE risk is recognised as being particularly high and difficult to prevent in immobile stroke patients.

While anticoagulation is typically prescribed for VTE prevention it is not recommended following acute stroke, due to further risk of bleeding, instead NICE Guidance (NG89) recommends mechanical prophylaxis [MP] using Intermittent Pneumatic Compression (IPC), as the primary intervention.

However, not all patients can be prescribed IPC due to intolerance or contraindication.

To address the identified unmet need, a team led by Professor Natarajan, Consultant Stroke Physician at Royal Stoke Hospital carried out a quality improvement (QI) study to evaluate an innovative neuromuscular (NMES) device, recommended by NICE (MTG19) where IPC cannot be prescribed.

Launched in 2018, the QI project programme was initiated after completion of a real-world audit between November 2016 – March 2018.

Partnering with the NMES device manufacturer, the team scoped and implemented a 1,000 patient prospective retrospective audit – NMES v IPC to measure patient compliance (tolerance) to both modalities and VTE events at 90 days post stroke. The protocol included four-hour reviews to maximise patient comfort and compliance of both interventions. The device was added to the drug chart for VTE prevention. The NMES device was used as an alternative anti-stasis intervention when IPC was contradicted or could not be tolerated and worn on both legs for 24 hours a day.

Key outcomes from the audit:

- 688 of admitted stroke patients were prescribed IPC.
- 203 were not suitable or unable to tolerate IPC.
- For those switched to NMES, no adverse events or skin reactions were reported.
- Average length of NMES and IPC was nine days per patient.
- 666 patients were followed up to measure VTE events at 90 days post stroke.
- VTE rate with IPC was 2.4%, whilst no VTE events were recorded with the NMES device.

The real-world data gathered in this project has gone on to influence wider NHS stroke units to assess unmet needs and adopt the NMES device. There are currently 15 fully adopted units and 16 progressing to adoption. A grant application to the National Institute for Health and Care Research has been successful and a multi-centre randomised controlled trial is in the process of being set up to determine if NMES devices could be more effective than IPC in preventing post stroke VTE rather than its use for unmet needs alone. The study will include input from stroke survivors.