

Effect of the introduction of a new pathway for prevention of venous thromboembolism (VTE) including neuromuscular electrical stimulation (NMES) on symptomatic VTE in immobile stroke patients

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Abstract

Background

Venous Thromboembolism (VTE) prophylaxis using Intermittent Pneumatic Compression (IPC) is not possible in all stroke patients. We introduced a new VTE pathway which includes Neuromuscular Electrical Stimulation of the peroneal nerve using the geko™ device (Firstkind Ltd UK) as an alternative prevention strategy for this patient group. In addition, compliance with VTE prophylaxis was reviewed 4-hourly as part of comfort rounds.

Methods

This is a prospective audit of the new pathway. All stroke patients admitted to the Acute Stroke Unit at Royal Stoke University Hospital between 1 Nov 2016 and 3 Mar 2018 were included. In line with UK guidelines patients unable to mobilize independently were prescribed IPC in addition to standard measures, e.g. hydration, mobilization, and aspirin where indicated, unless patients were palliative, fully anticoagulated, or refused the intervention. Patients who could not use IPC (intolerance, falls risk, out of stock) were switched to the geko™ device.

Results

In total 1000 stroke patients were included. Of these 187 (18.7%) required no prophylaxis, 125 (12.5%) were fully anti-coagulated, and 688 (68.8%) required mechanical VTE prophylaxis (MP). Of these 463 (67.3%) received IPC and 122 (17.7%) the geko™ device as their only intervention. A further 81 (11.8%) patients became intolerant to IPC and were prescribed the geko™ as a secondary intervention and 22 (3.2%) refused treatment. The geko™ was used in 203 (29.5% of MP).

Conclusion

The new strategy of increased surveillance, and use of the geko™ device where indicated, for patients who cannot use IPC was associated with a low overall

incidence of symptomatic VTE (1.5%). The incidence in high risk immobile patients requiring MP was 1.9% (13/687), which is lower than the 6.6% in a comparable patient population in the CLOTS-3 study.