Improving hyperacute stroke pathways at two specialist cardiothoracic centres (Royal Brompton Hospital and Harefield Hospital)

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Introduction

Following a new stroke, care is best delivered on hyperacute stroke units (HASUs), where early multidisciplinary input has been shown to improve prognosis and reduce morbidity.[1] HASUs are also able to safely deliver reperfusion therapies such as thrombolysis or thrombectomy. These can drastically improve outcomes for suitable patients, but are subject to narrow therapeutic time windows and have potential risks and contraindications.

An estimated 5% of new strokes occur in patients already hospitalised for another condition.[2] Stroke is especially prevalent in patients undergoing cardiac procedures and cardiothoracic surgery, owing to shared risk factors and periprocedural complications. The Royal Brompton and Harefield hospitals are specialist cardiothoracic centres aligned for excellent cardiothoracic care, but lack on-site access to a HASU. This quality improvement project addresses key challenges in managing acute stroke at these hospitals.

Materials and methods

Clinical staff were interviewed and asked to complete a questionnaire to document current practice. Key targets for improvement were identified based on initial responses. New guidance posters (Fig 1) were created, outlining optimal diagnostic and referral protocols for both hospitals. Also incorporated was the stroke recognition tool 'BEFAST' (Balance, Eyes, Face, Arm, Speech, Time), which was previously reported to be more sensitive at detecting posterior circulation stroke than the conventional 'FAST'.[3] Posters were distributed around key clinical areas, accompanied by teaching sessions and governance meeting presentations. The staff questionnaires were repeated following these interventions.

Results

The questionnaire was completed by 41 respondents at baseline, and by 57 respondents following interventions. The key results are summarised in Table 1. The percentage of respondents who self-rated ≥ 8/10 for confidence in recognising stroke increased from 39% at baseline to 70% following intervention. Awareness of the BEFAST tool increased from 0% to 56% of respondents following intervention. Respondents were more confident in following the acute stroke pathway following intervention; scored from 1–10, median confidence increased from 4 (3–6) (median (interquartile range)) to 8 (6–9). The correct HASU referral centre was identified by 65% of respondents at baseline and increased to 89% following intervention. Intermittent pneumatic compression devices were correctly identified as the first-line venous thromboembolism (VTE) prophylactic method by 24% of respondents at baseline, increasing to 53% following intervention. Respondents listing all three of the key allied health professionals to involve in acute stroke care (physiotherapy, occupational therapy and speech and language) improved modestly from 51% to 60%.

Conclusion

This quality improvement project highlights many challenges to the provision of optimal hyperacute stroke care at detached cardiothoracic specialist centres. Creation of guidance posters incorporating the stroke recognition tool 'BEFAST' led to substantial improvements in staff confidence and knowledge of stroke care. Further work is planned to include incorporation into trust guidelines and creation of a brief e-learning induction module. ■

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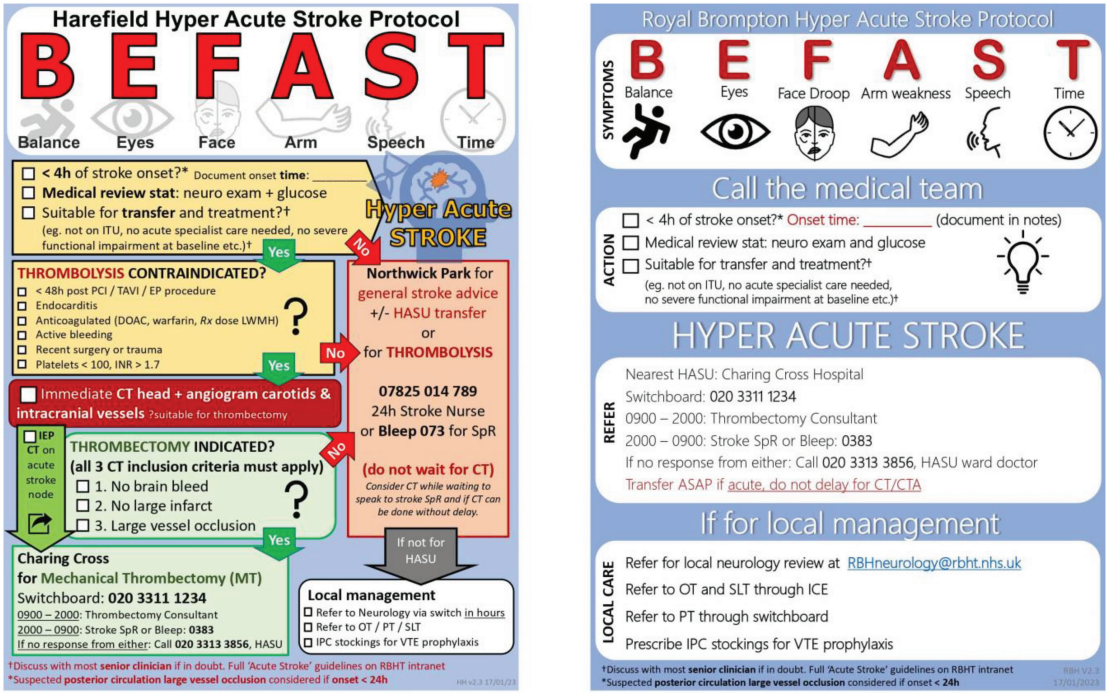

Fig 1. New guidance posters outlining the hyperacute stroke pathway and optimal diagnostic and referral protocols for both hospitals.

Table 1. Responses to the questionnaire at baseline and after implementation of the poster, teaching sessions and governance meeting presentations

	Baseline	Post-intervention
How confident do you feel recognising stroke symptoms? (median (interquartile range))	7 (7–8)	8 (7–8)
How confident do you feel following the acute stroke pathway? (median (interquartile range))	4 (3–6)	8 (6–9)
Confidence score ≥8 (self-rated 1–10) in recognising stroke (% responses)	39	70
Confidence score ≥8 (self-rated 1–10) in using stroke pathway (% responses)	7.3	56
Which hyperacute stroke unit (HASU) should be contacted? (% correct)	65	89
What is the time window for stroke thrombolysis according to guidelines? (% correct)	50	53
What is the time window for stroke thrombectomy according to guidelines? (% correct)	38	44
What is the preferred VTE prophylaxis method according to stroke guidelines? (% correct)	24	53
What stroke recognition tools do you know? (% responding 'BEFAST')	0	56
What stroke recognition tools do you know? (% responding 'FAST')	76	35
What stroke recognition tools do you know? (% responding 'none')	22	3.5
Which allied health professionals should be involved in stroke care early? (% responding PT / OT / SALT)	51	60

References

1 Royal College of Physicians. *National clinical guideline for stroke*. RCP, 2016. http://guideline.ssnap.org/2016StrokeGuideline/html5/index.html [Accessed 13 January 2023].
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