

ARE UK STROKE UNITS GETTING BETTER AT DELIVERING ANTICOAGULANT REVERSAL TREATMENT FOR INTRACEREBRAL HAEMORRHAGE?

ANALYSIS OF NATIONAL REGISTRY DATA

Holloway, M.¹, Hbid, Y.¹, Stanley, K.¹, Bhalla, A.^{1,2}, James, M.A.^{1,3}

¹ Sentinel Stroke National Audit Programme, King's College London, UK

² Guy's and St Thomas' NHS Foundation Trust, London, UK

³ Royal Devon University Healthcare NHS Foundation Trust, Exeter, UK

Background:

Current clinical guidelines for stroke recommend urgent reversal of anticoagulants in intracerebral haemorrhage (ICH) patients¹. Using national registry data from SSNAP (the national stroke audit for England, Wales, and Northern Ireland) we examined changes in the practice of anticoagulant reversal in acute ICH.

Methods:

SSNAP collected data between 2018-2023 for 158 acute stroke teams using an online proforma including validations to ensure accuracy and complete case ascertainment. All ICH patients who were on prior anticoagulation were analysed, with comparisons made using Chi-squared and Kruskal-Wallis tests.

Results:

Of 45,990 ICH patients admitted over 5 years, 10,002 (21.7%) were on an anticoagulant prior to stroke. No significant difference was seen over time in the proportion treated with a reversal agent. There was a significant decrease in the proportion of patients identified as on an anticoagulant prior to ICH (21%-19%, $p < 0.005$) (fig. 1). There were no significant differences in the time from arrival to first administration of a reversal agent [Median: 152mins, IQR 81-311] or time from scan to reversal agent [Median: 92mins, IQR 45-178] (fig.2). There has been a change in the type of anticoagulant patients are on prior to admission with ICH (fig.3). A change has correspondingly been seen in the anticoagulant reversal therapy being used, with a significant increase in specific DOAC antidote use [10%-29%, $p < 0.0001$] and significant falls in both PCC [59%-57%, $p < 0.0001$] and Vitamin K [51%-24%, $p < 0.0001$] use (fig.4).

Figure 1: Proportion of ICH patients on an anticoagulant prior to stroke 2018-2023

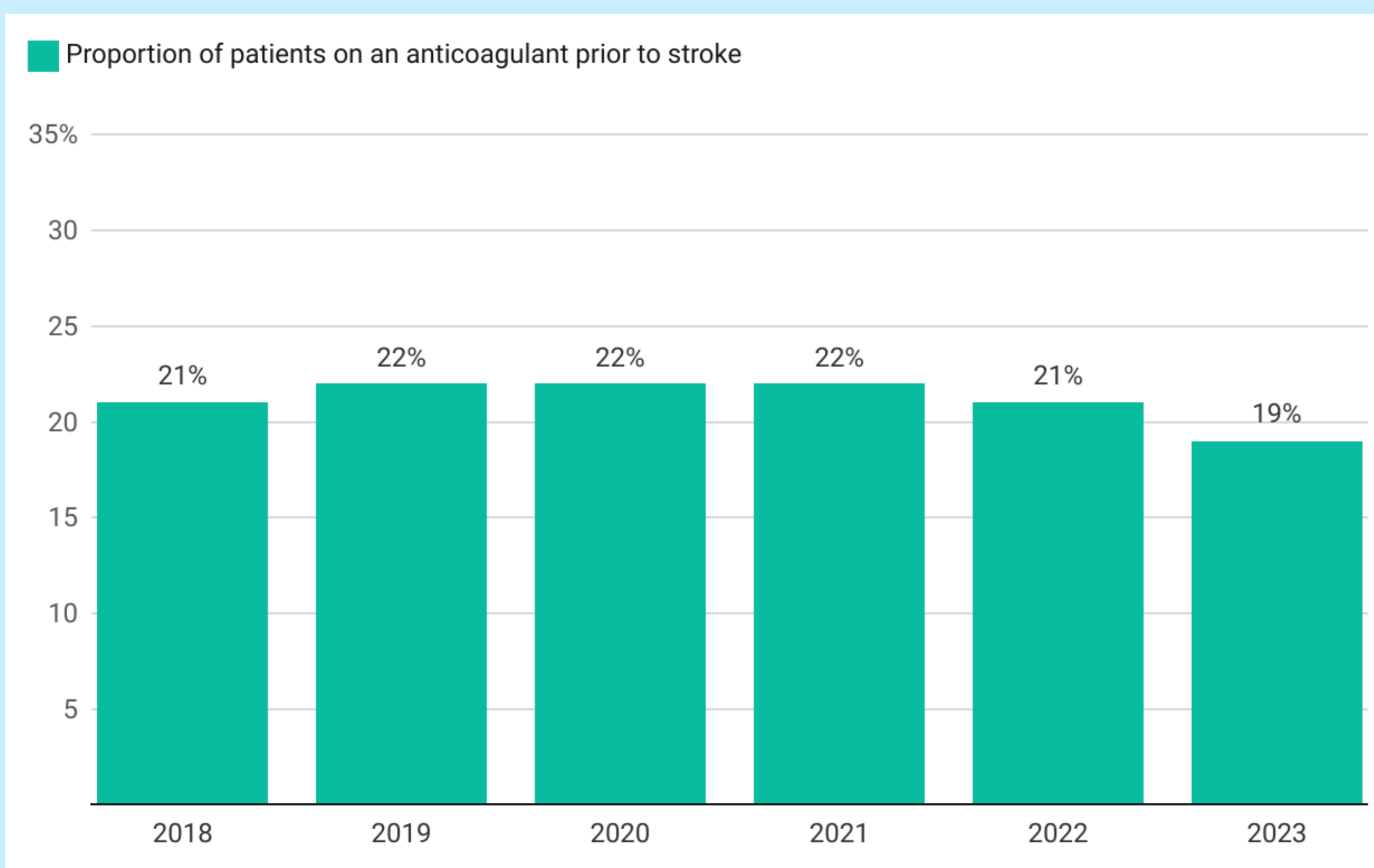
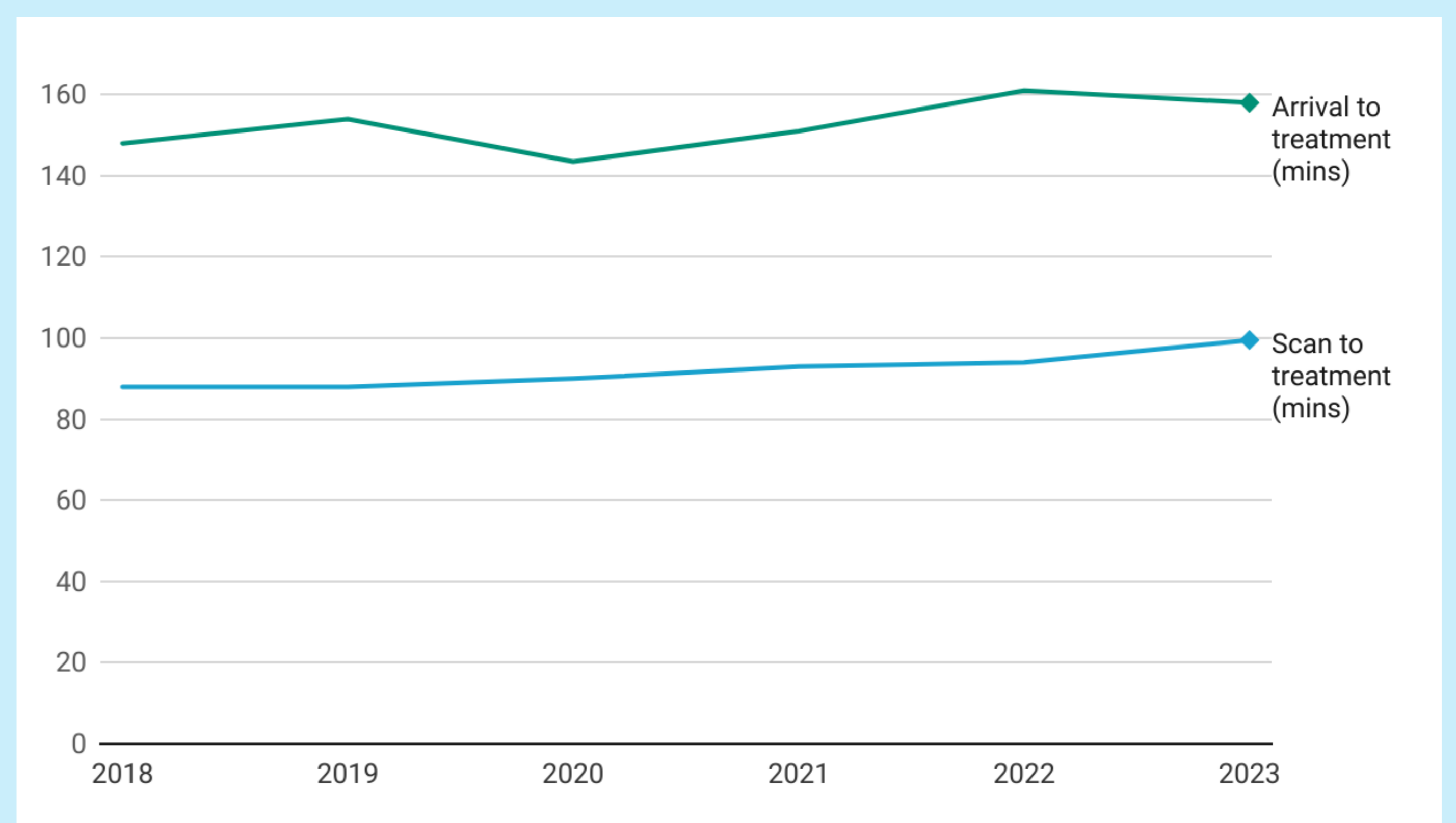


Figure 2: Median time between arrival and scan to anticoagulant reversal treatment in ICH patients on an anticoagulant prior to stroke 2018-2023



The proportion of patients treated with an anticoagulant reversal agent has remained static over time, at 12%

Figure 3: Anticoagulant use in ICH patients prior to stroke 2018-2023

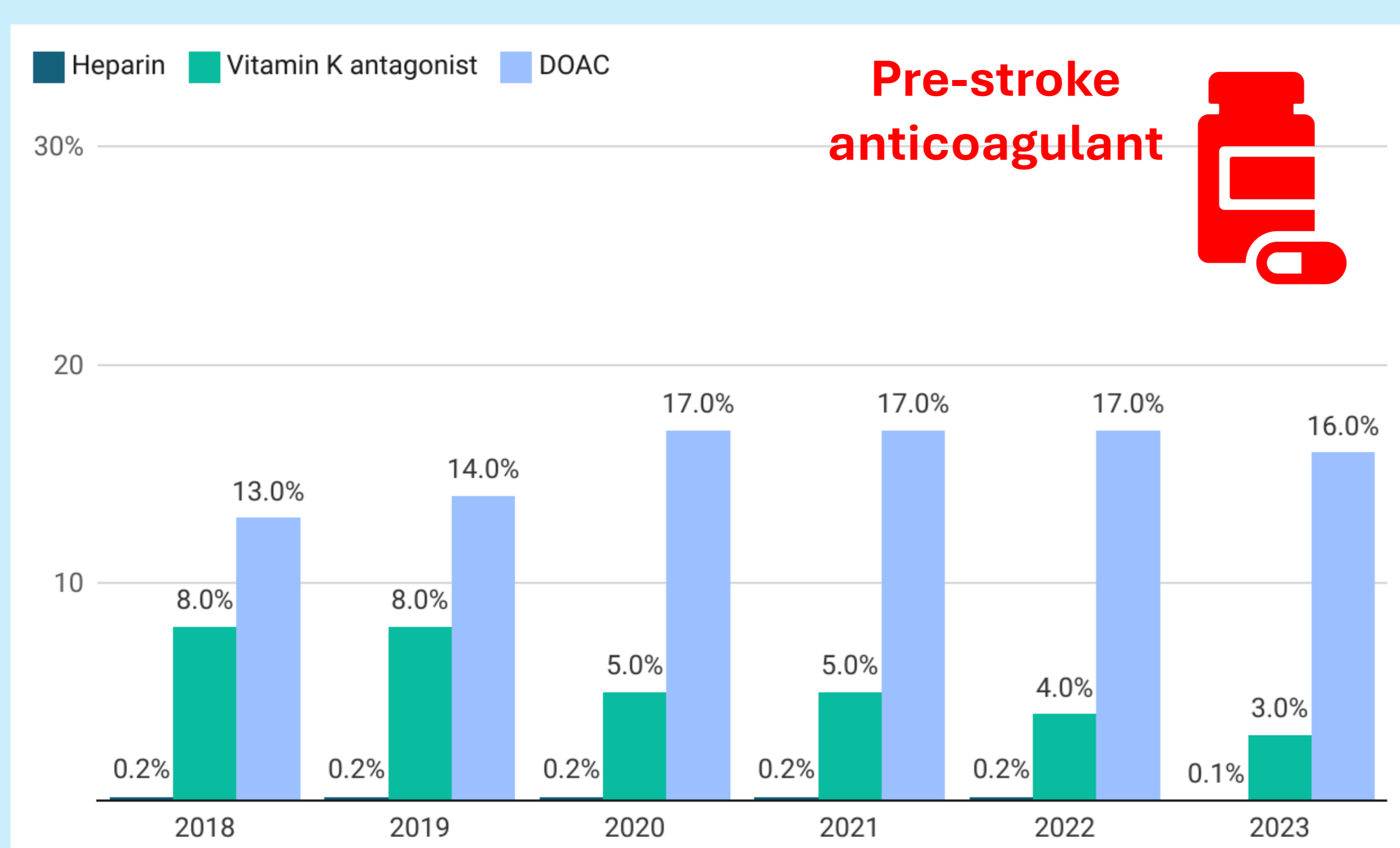
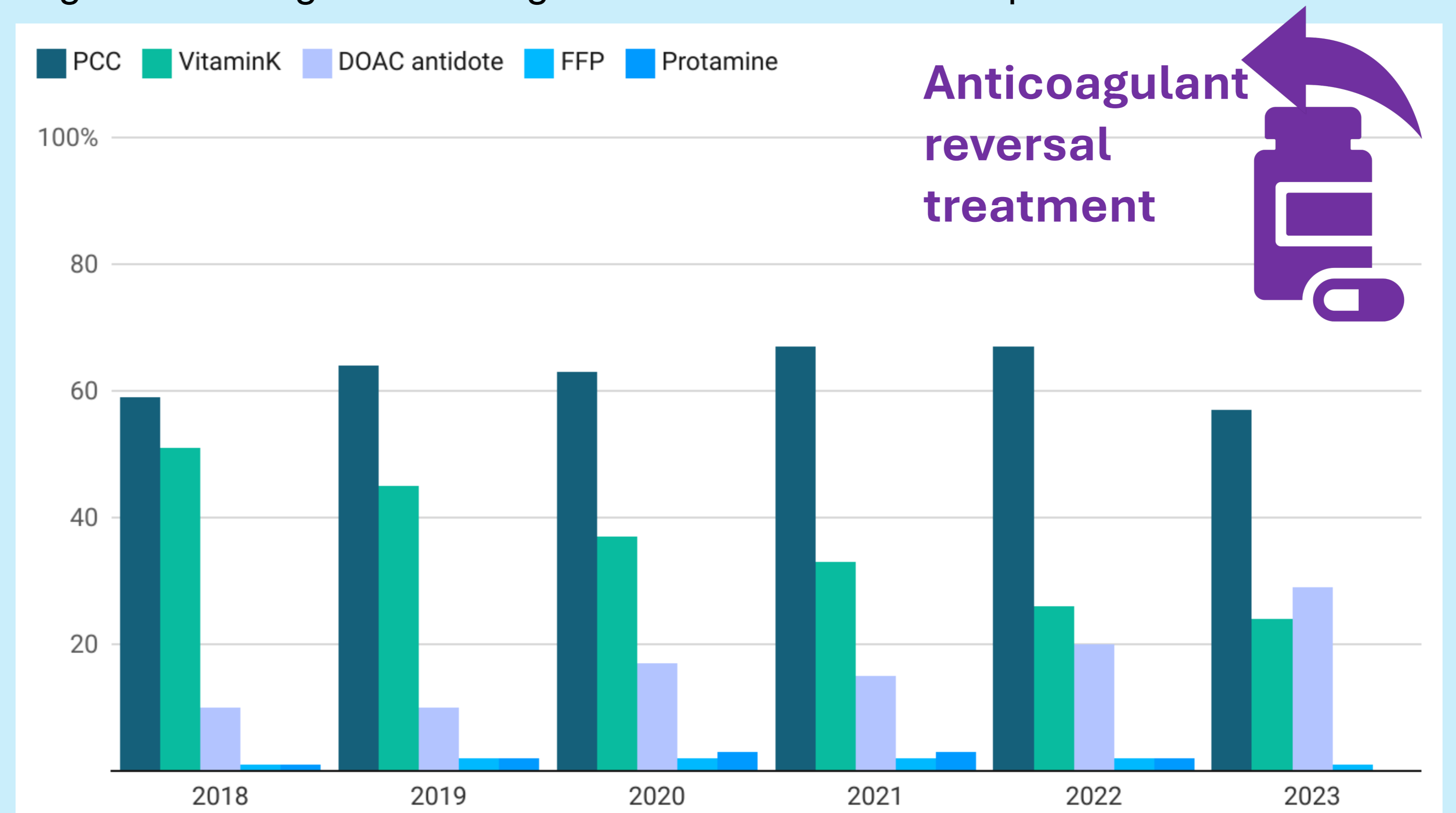


Figure 4: Change in anticoagulant reversal use in ICH patients 2018-2023



Conclusion:

Despite guidelines recommending urgent anticoagulant reversal in ICH patients, there has been no change in the level or speed of reversal agent administration over the past 5 years in UK stroke units. The decrease in ICH patients on an anticoagulant may reflect the wider use of DOACs in preference to VKAs. Despite this declining proportion of ICH which are seemingly attributable to oral anticoagulation, we have not seen an overall decrease in the incidence of ICH, this may be because other causes of ICH such as ageing are increasing. As shown in the INTERACT III study², quality improvement in hyperacute ICH management should include the faster administration of reversal agents for a greater proportion of patients with anticoagulant-related ICH to reduce variation and improve subsequent outcomes.

References:

1National Clinical Guideline for Stroke for the UK and Ireland. London: Intercollegiate Stroke Working Party; 2023 May 4. Available at: www.strokeguideline.org.

2Ma, L., et al.(2023). The third Intensive Care Bundle with Blood Pressure Reduction in Acute Cerebral Haemorrhage Trial (INTERACT3): an international, stepped wedge cluster randomised controlled trial. doi:[https://doi.org/10.1016/s0140-6736\(23\)00806-1](https://doi.org/10.1016/s0140-6736(23)00806-1).

Acknowledgements: Thank you to all the individuals and organisations who participate in SSNAP. SSNAP is funded by NHS England and NHS Wales