

# Thrombectomy for ischaemic stroke – are we doing it right and what can we improve on?



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## BACKGROUND:

Endovascular thrombectomy has become the standard of care for severe acute ischemic stroke caused by large-vessel occlusion in the anterior circulation, however, there is uncertainty regarding the optimal anaesthetic approach during this therapy. In September 2015, the Intercollegiate Stroke Working Party published national standards for providing safe acute stroke thrombectomy services in the UK. These included recommendations for anaesthetic management perioperatively. An audit was undertaken in March 2018 to assess adherence to the standards at the Royal Victoria Infirmary (RVI), Newcastle and a subsequent re-audit in May 2019.

## METHODOLOGY:

Retrospective audit of patients who had thrombectomy in RVI between 1/5/2018 and 30/4/2019. Cases were identified from the operating theatre's records. Data were collected from anaesthetic charts and patient records which included detailed perioperative management of patients who undergone thrombectomy and postoperative follow-up. The results were compared to results from the previous audit cycle.

## RESULTS:

- 49 patients were identified and audited (31M:18F, mean age 65 years, range 23-84 years).
- Figure 1 shows the National Institutes of Health Stroke Scale (NIHSS) at presentation of which 95% had at least moderate severity stroke (score  $\geq 5$ ).
- Figure 2 illustrates that the 90-minute target to groin puncture post intravenous thrombolysis was achieved in 58% of cases. (50% in the initial audit). Interestingly, a large proportion (71%) of patients who did not meet this target came from external hospital sites.
- 76% of cases were performed under the recommended local anaesthesia (62% previously) as shown in Figure 3 and no rescue general anaesthesia (GA) had to be performed.
- Figure 4 shows that basic perioperative physiological parameters monitoring (SpO<sub>2</sub>, ECG, blood pressure) was maintained at 100% compliance whilst capnography (EtCO<sub>2</sub>) monitoring and intraoperative systolic blood pressure management for GA patients improved significantly in the re-audit.
- 100% compliance with post-operative destination of which all patients who had GA were managed in ICU/HDU/Stroke Unit.
- Proportion of cases led by consultant neuroanaesthetists remained similar in the re-audit.

Figure 1: NIHSS at presentation

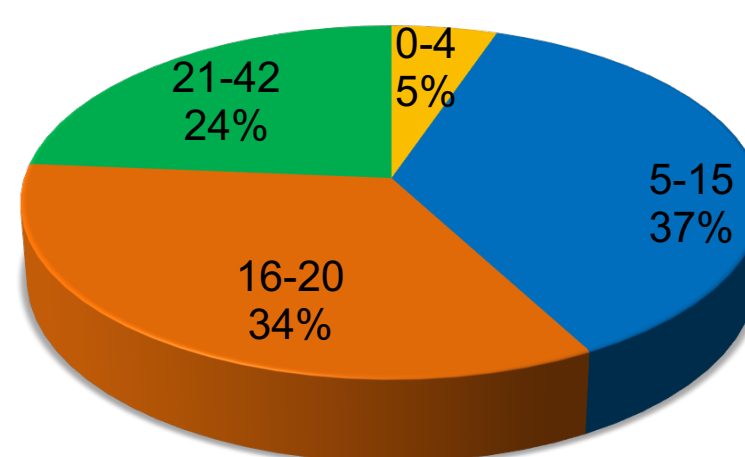


Figure 2. 90-minute target to groin puncture post intravenous thrombolysis

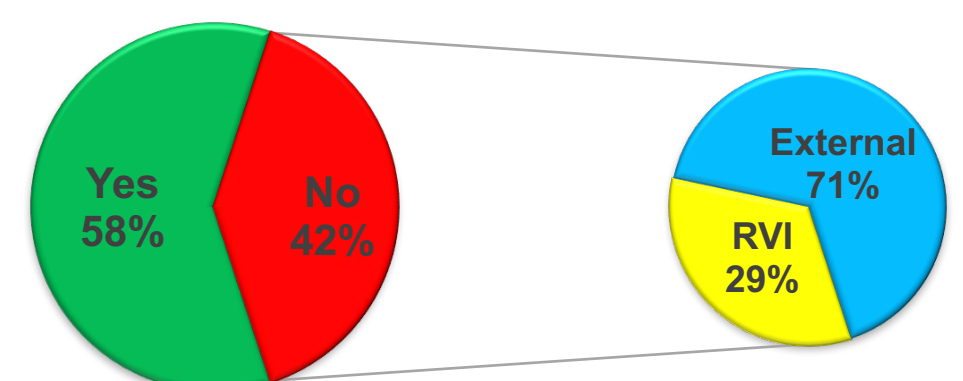


Figure 3. Type of anaesthesia

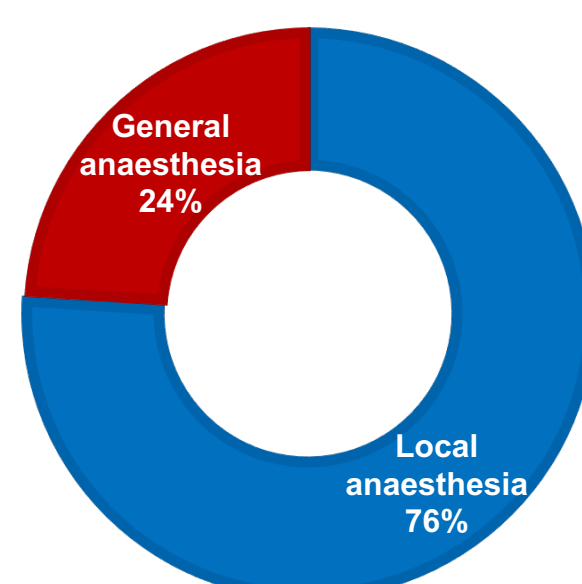
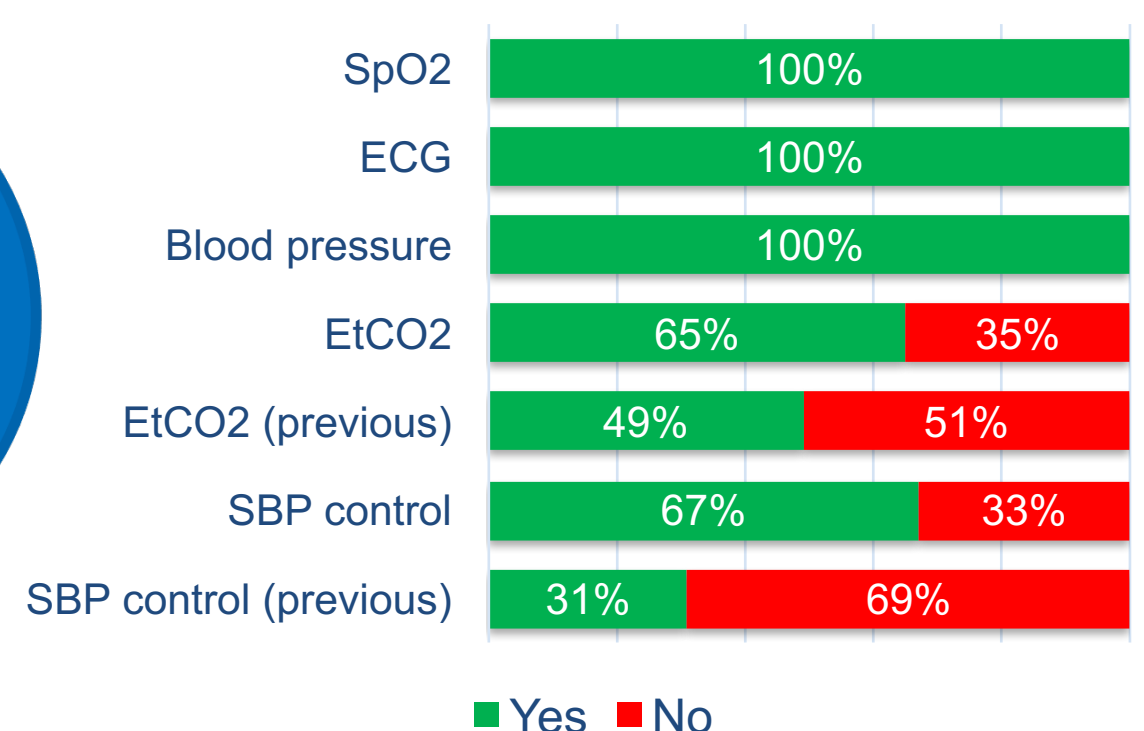


Figure 4. Perioperative physiological parameters monitoring



## CONCLUSION:

This re-audit has shown an improvement in awareness and compliance with the national acute stroke thrombectomy standards. Timely and close communication between physicians, anaesthetists and neurointerventionalists can minimise delay and allow the most appropriate anaesthetic technique to be performed according to the individual patient's circumstances. Educational programmes involving multiple specialties involved in thrombectomy may further improve compliance and improve patient outcomes.