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# Real-world evidence of the efficacy of Mechanical Thrombectomy in the UK: Results from nationwide stroke registry and comparison with the HERMES metanalysis


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## INTRODUCTION

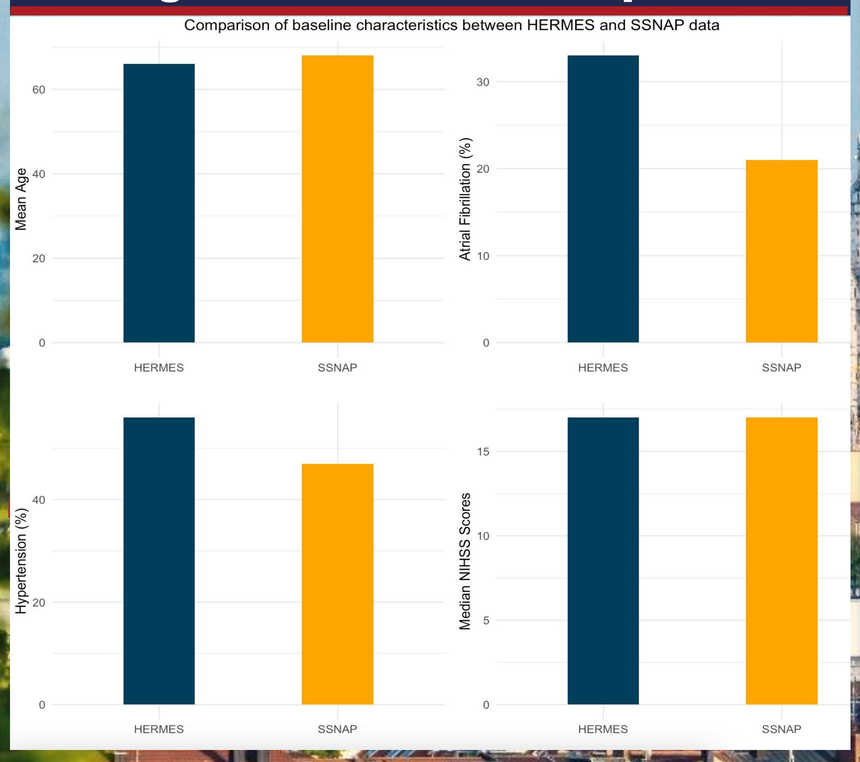
Randomized controlled trials have shown mechanical thrombectomy (MT) to be a highly effective and safe treatment in experienced centres. Large scale national disease registry data can establish whether the same benefits accrue from real-world clinical implementation.

We report MT outcomes from the UK national registry (SSNAP) in comparison with the meta-analysis from the HERMES collaboration.

## METHODS

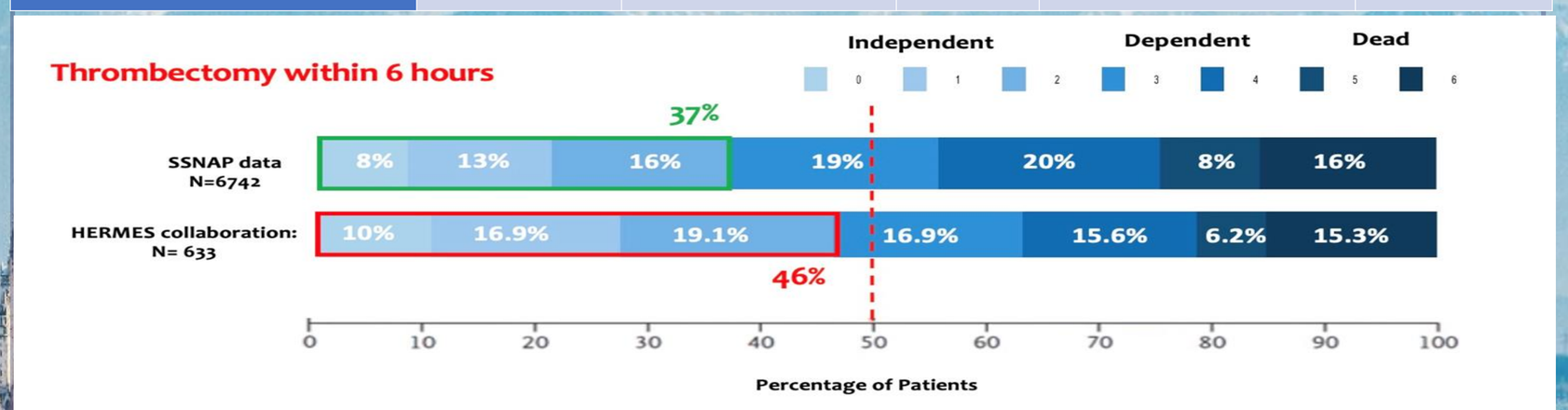
- Data were extracted from the national SSNAP register from all 26 UK centres providing MT for patients admitted between 2016 and 2022.
- 540,682 patients were recorded in SSNAP, of which 8,381 were treated with MT (1.5%).
- Primary outcome is functional independence measured using the modified Rankin Scale (mRS 0-2) at 90 days or discharge.
- Descriptive statistics were used to analyse patient characteristics and subgroups.

## Figure 1: Casemix comparison




## RESULTS

| Treatment and outcome details | N | SSNAP | N | HERMES | P value |
|---|---|---|---|---|---|
| Treatment with tPA | 8381 | 4630 (55%) | 634 | 526 (83%) | <0.001 |
| Treatment with tPA within 180 min | 8381 | 4589 (54%) | 634 | 442 (70%) | <0.001 |
| Onset to tPA (min) | 4630 | 135 [105 ; 178.8] | 598 | 100 [75 ;133] | 0.5 |
| Onset to arterial puncture (min) | 8381 | 296 [219 ; 440 ] | 607 | 238 [180 ; 302] | <0.001 |
| Onset to reperfusion (min) | 7779 | 322 [242 ; 473 ] | 385 | 285 [210 ; 362] | <0.001 |
| Arrival to arterial puncture (min) | 8381 | 169 [110 ; 245 ] | 602 | 104 [74 ; 148] | <0.001 |
| Arterial puncture to Reperfusion (min) | 7177 | 20 [13 ; 31] | 384 | 44 [27 ; 64.5] | <0.001 |
| Arrival to reperfusion (min) | 7177 | 193 [133 ; 271 ] | 383 | 148 [112 ; 197] | <0.001 |
| NIHSS 0-2 at 24h | 8256 | 1726 (21%) | 615 | 129 (21%) | 0.96 |
| NIHSS at 24h | 8256 | 10.9 (9.3) | 615 | 10.4 (8.7) | 0.42 |
| Change in NIHSS from baseline to 24h | 8256 | -5.4 (9.0) | 615 | -6.4 (8.2) | 0.42 |
| mTICI score 2b/3 | 8381 | 6743 (80%) | 570 | 402 (70.5%) | <0.001 |
| Modified Rankin scale 0-2 | 8381 | 3100 (37%) | 633 | 291 (46%) | <0.001 |
| Modified Rankin scale 3-5 | 8381 | 3939 (47%) | 633 | 245 (38.7%) | <0.001 |
| Discharge mortality | 8381 | 1340 (16%) | 633 | 97 (15.3% ) | 0.70 |




## CONCLUSIONS

- The UK MT-treated population has some significant differences in baseline characteristics, bridging thrombolysis use and workflow compared to the original trials included in HERMES, but pre-treatment stroke severity was similar.
- Procedural and short-term outcomes (NIHSS at 24 hrs) are similar between the datasets.
- Real-world implementation of MT in the UK has resulted in similar case-fatality rate to that seen in HERMES. Although median mRS (at discharge [SSNAP] or 90 days [HERMES]) cannot be directly compared, a smaller proportion of UK patients achieved an 'independent' outcome (mRS 0-2).

## Reference


*Goyal, M.,HERMES collaborators (2016). Endovascular thrombectomy after large-vessel ischaemic stroke: a meta-analysis of individual patient data from five randomised trials. Lancet (London, England), 387(10029), 1723–1731. https://doi.org/10.1016/S0140-6736(16)00163-X*


## Acknowledgment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