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### Background

The Sentinel Stroke National Audit Programme (SSNAP) is the national stroke care register in **England, Wales and Northern Ireland**.

SSNAP collects patient-level information including information about **endovascular thrombectomies** (intra-arterial therapy, IAT) that are carried out in England, Wales and Northern Ireland.

### Methods

Patient-level data from 132,314 patients recorded in SSNAP were analysed for patients admitted between October 2015 and April 2017. Patient characteristics, reperfusion rates and short-term outcomes for patients that underwent IAT were analysed and compared to reperfusion data and outcomes from the meta-analysis by the HERMES collaboration (*Endovascular thrombectomy after large vessel ischaemic stroke: a meta-analysis of individual patient data from five randomised trial*, Goyal et al, 2015).

### Results

Analysis of SSNAP data included 649 patients who received IAT at 25 sites over 18 months. The primary outcome in HERMES was disability on the modified Rankin Scale (mRS) at 90 days. Comparison of 90-day mRS between SSNAP and the intervention group from HERMES is not possible due to differing timescales of data collection, but 24-hour NIHSS scores and modified TICl scores were similar between SSNAP and HERMES.

Demographic	SSNAP (n=649)	HERMES (n=634)
Age (years), median (IQR)	69 (56-78)	68 (57-77)
Gender (male)	345 (53%)	330 (52%)
Hypertension	286 (44%)	352 (56%)
Diabetes mellitus	85 (13%)	82 (13%)
Atrial fibrillation	151 (23%)	209 (33%)
NIHSS arrival, median (IQR)	17 (12-22) <sup>†</sup>	17 (14-20) <sup>*</sup>

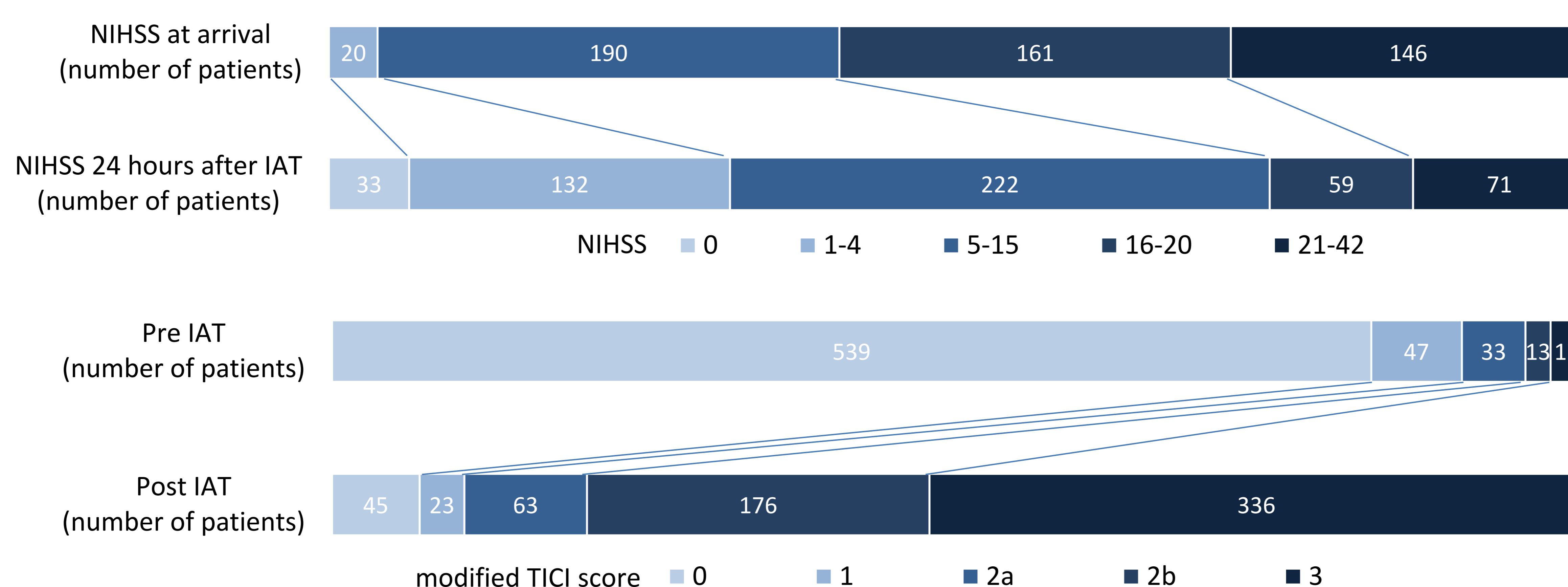
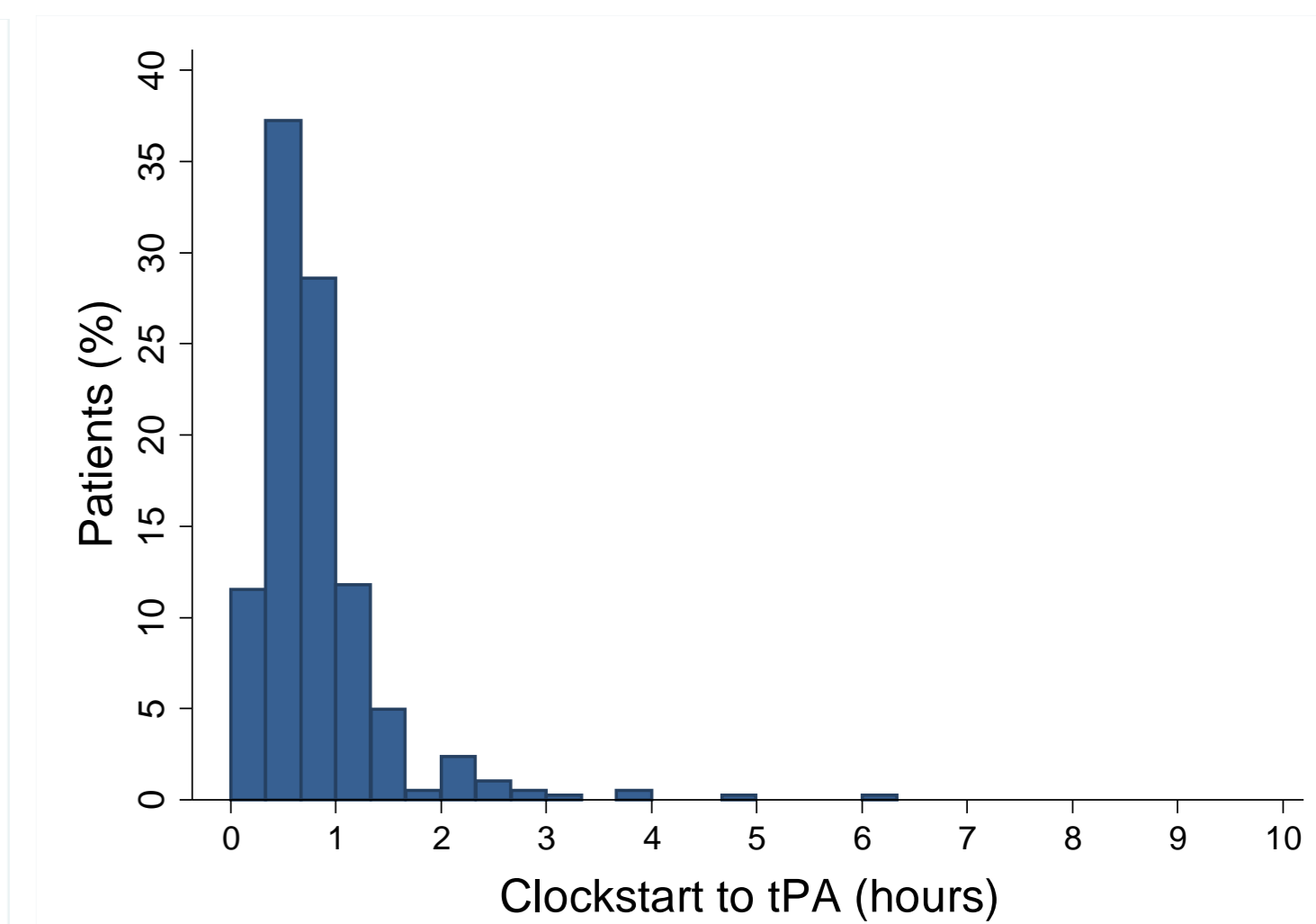
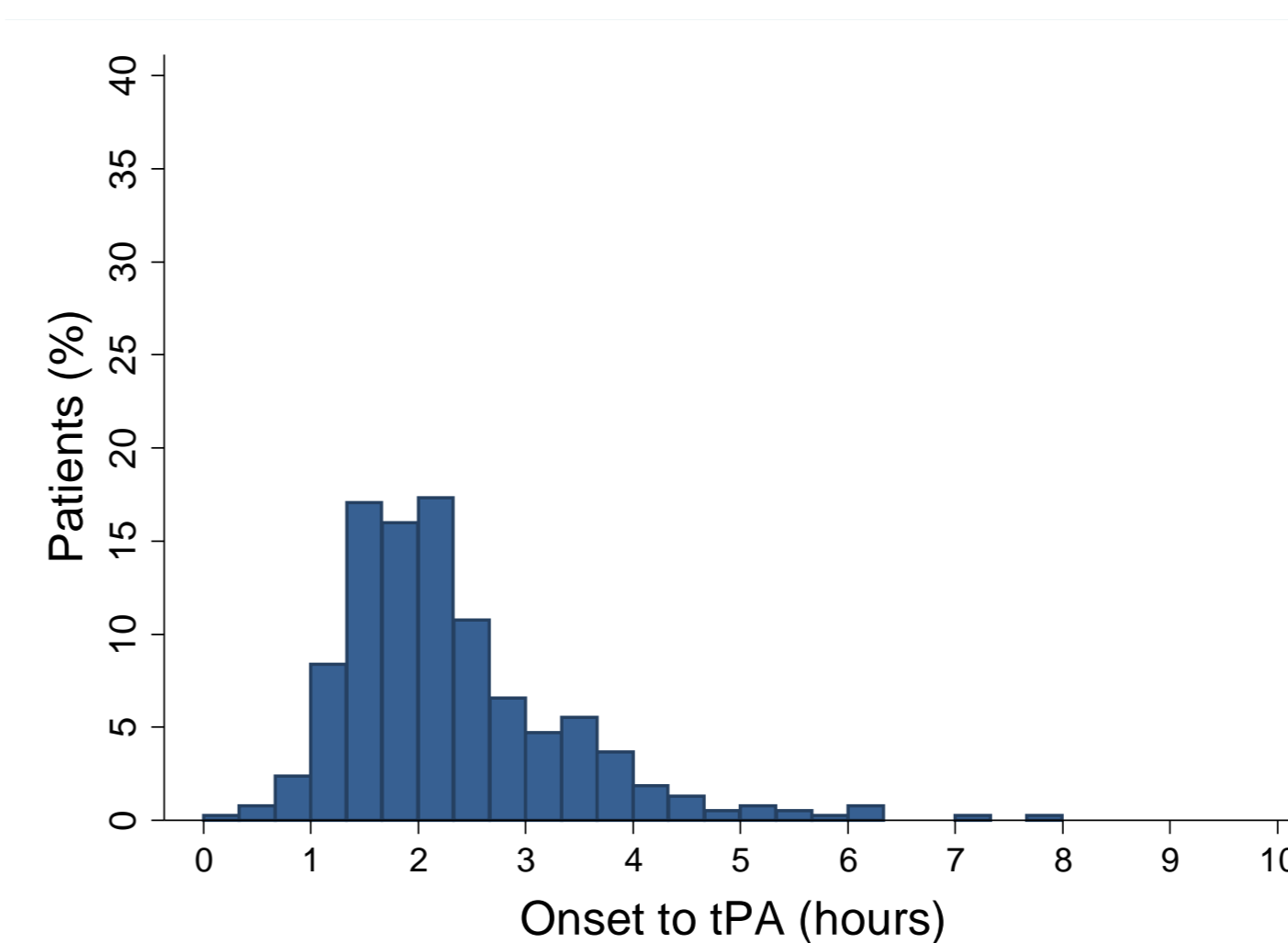
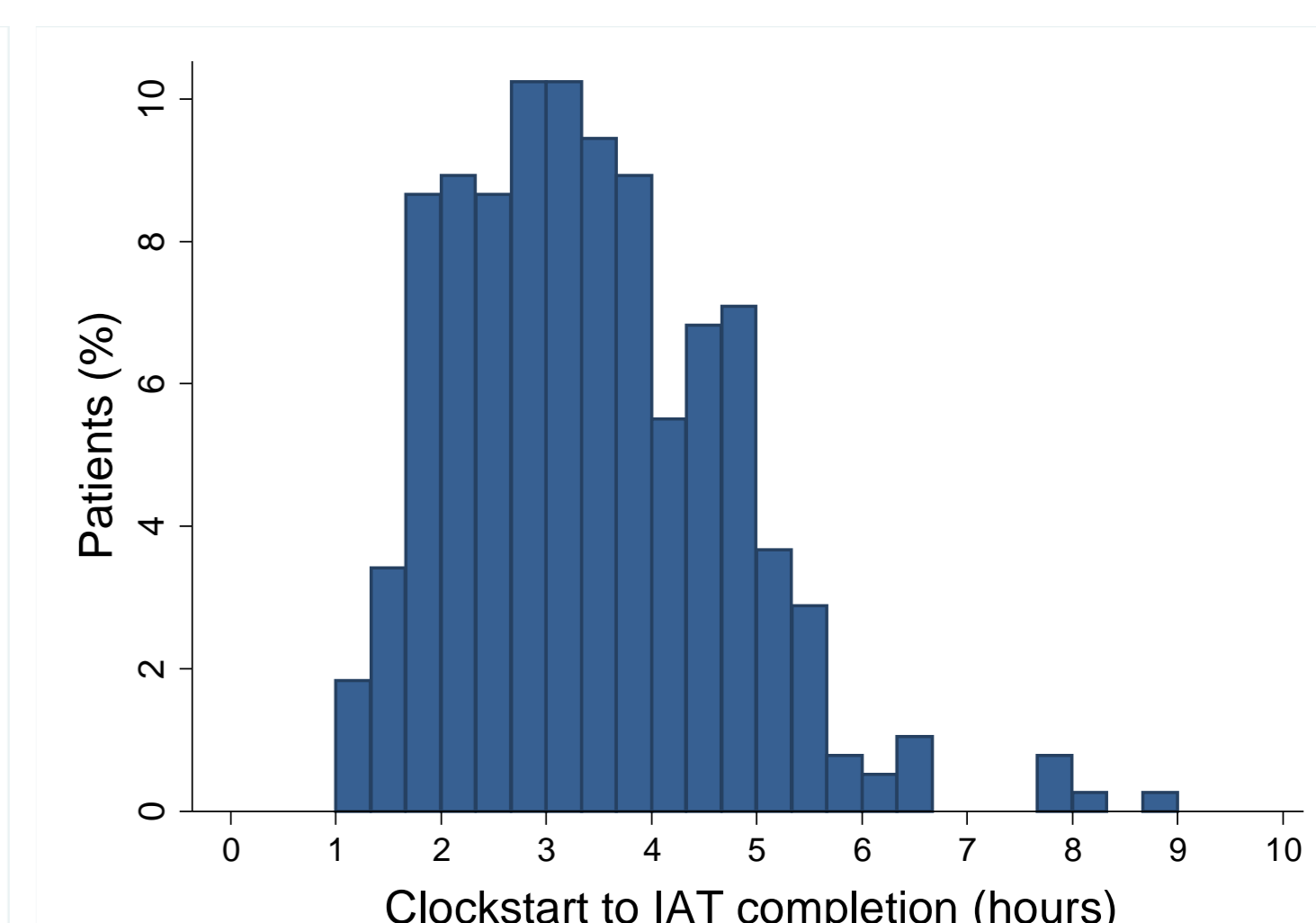
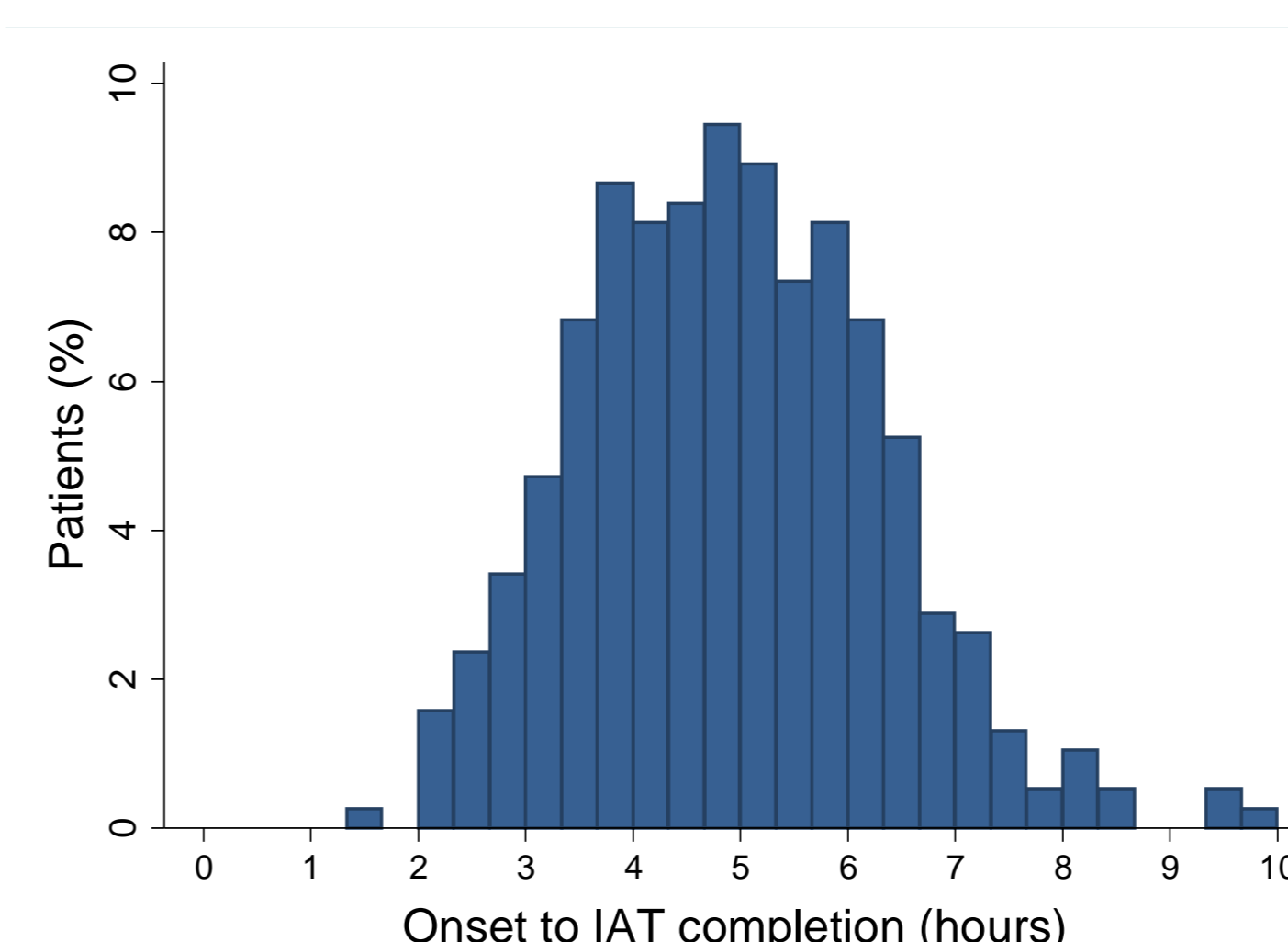
<sup>†</sup>n=569 <sup>\*</sup>n=631

Treatment details	SSNAP (n=649)	HERMES (n=634)
Treatment with intravenous alteplase (tPA)	399 (62%)	526 (83%)
Treatment with tPA documented within 180 min of onset	302 (48%)	442 (70%)
Onset to tPA (min)	125 (95-165) <sup>†</sup>	100 (75-133) <sup>‡</sup>
Onset to reperfusion(HERMES)/completion(SSNAP) (min)	300 (239-370) <sup>  </sup>	285 (210-362)

Median (IQR), n (%). <sup>†</sup>n=391 <sup>‡</sup>n=598 <sup>||</sup>n=605

Outcomes	SSNAP (n=517)	HERMES (n=615)
NIHSS 0-2 at 24h	106 (21%)	129 (21%)
Mean (SD) NIHSS at 24h	10.3 (8.6)	10.4 (8.7)
Mean (SD) change in NIHSS from baseline to 24h	-6.3 (7.7)	-6.4 (8.2)
mTICl score 2b/3	512 (79%) <sup>**</sup>	402 (71%) <sup>††</sup>

<sup>\*\*</sup>n=649 <sup>††</sup>n=570



### Discussion

The characteristics and short-term outcomes of patients treated with IAT in SSNAP were very similar to the intervention cohort in trials, despite modestly longer onset to completion times and lower use of tPA. One consideration is incomplete acquisition of IAT cases in SSNAP, which could bias results in favour of apparently better outcomes.