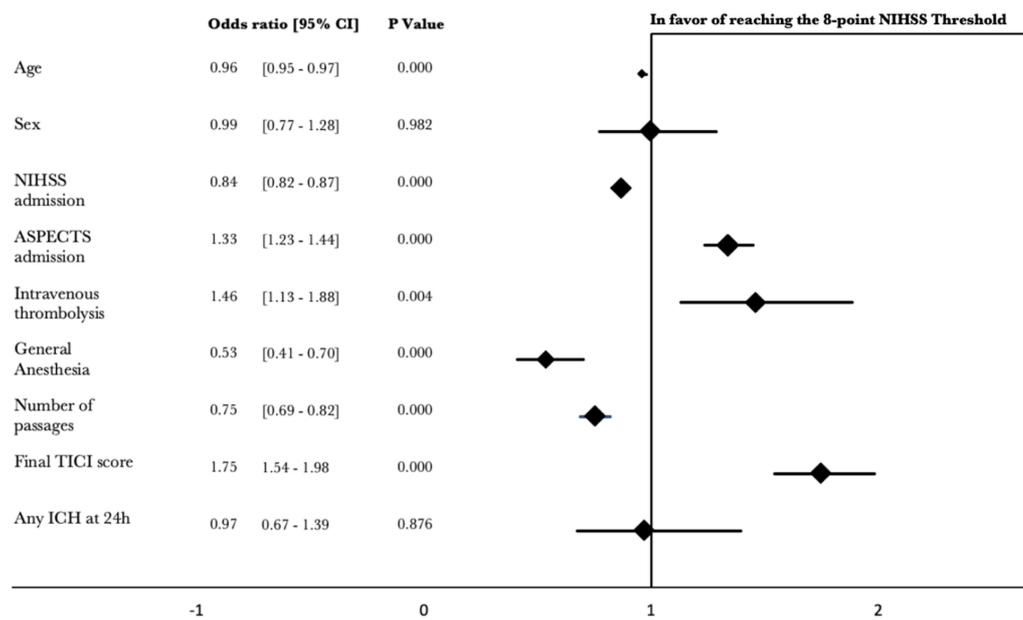


SUPPLEMENTAL

FIGURES

Figure 1: Forest plot of logistic regression analysis for reaching the NIHSS threshold of 8-points.



Additional discussion

Threshold of ≤ 8 NIHSS points at 24h postintervention

As the threshold with the highest predictive value for long-term functional independency (mRS 0-2) the NIHSS ≤ 8 points at 24h postintervention, logically, represents a group of patients with individual and procedural variables that are each for themselves and even more in combination most responsive for a net beneficial treatment effect.

Focusing on individual patient characteristics, our analysis corroborated previous findings showing that younger age, lower NIHSS scores on admission and higher initial ASPECTS are independent predictors for a favorable functional long-term outcome¹⁻³.

Regarding treatment associated variables, logistic regression analysis showed that intravenous thrombolysis (IVT) was significantly associated (OR 1.46, 95% CI 1.13-1.88, $p=0.004$) with functional independency. This finding may support the additional use of IVT prior to thrombectomy which remains a matter of debate and is currently investigated by three randomized trials⁴. However, this finding might be biased since the vast majority of this thrombectomy registry are patients that are treated outside of time windows endorsed by German guidelines⁵. Therefore, patients that received IV lysis possibly represent cases treated within shorter onset-treatment-time windows. Further potential differences in medical history, including medication, and comorbidities cannot be ruled out ultimately as a potential selection bias in these cases⁶. General anesthesia including cases with conversion from conscious sedation to general anesthesia showed a significant association (OR 0.53, 95% CI 0.41-0.70, $p<0.001$) towards a lower likelihood for reaching the threshold. This finding is most likely explained by the fact that severely affected patients were intubated due to their poor condition before hospital admission or prior to endovascular treatment. Additionally, cases with conversion from conscious sedation to general anesthesia marked cases with acute worsening of the patient or severe complications. Furthermore, the achievement of higher recanalization

(OR 1.75, 95% CI 1.54-1.98, $p < 0.001$) degrees (assessed with the TICI scale) with fewer thrombectomy attempts (OR 0.75, 95% CI 0.69-0.82, $p < 0.001$) were both variables with significant values for outcome prediction. These results are in line with previous studies that showed that the first-pass with complete recanalization has the highest chance for long-term functional independency and up to three thrombectomy attempts are safe leading still to increased rates of good functional outcome^{7 8}.

Figure 2: Distribution of modified Rankin scale (mRS) scores at 90-days stratified by patients with and without reaching the early neurological improvement (ENI) threshold of 8-points at 24h postintervention follow-up.

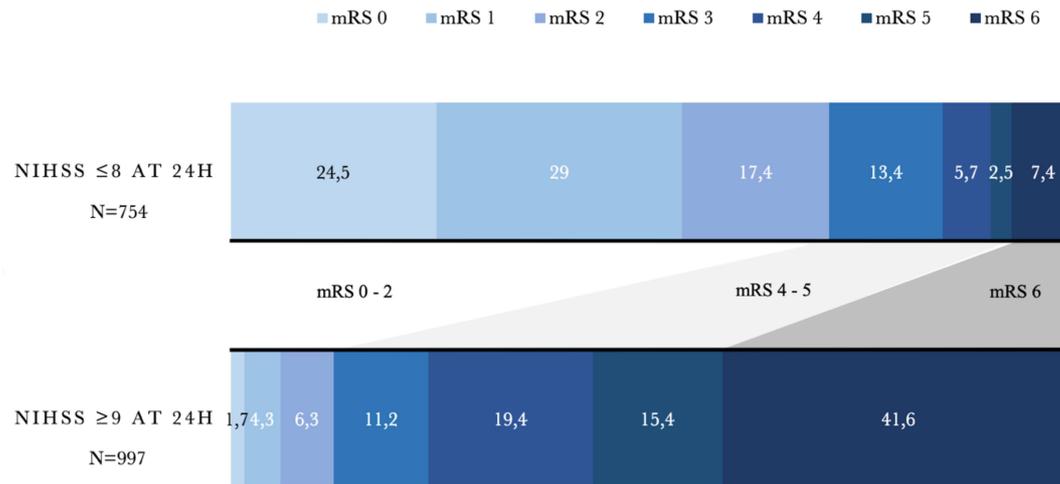
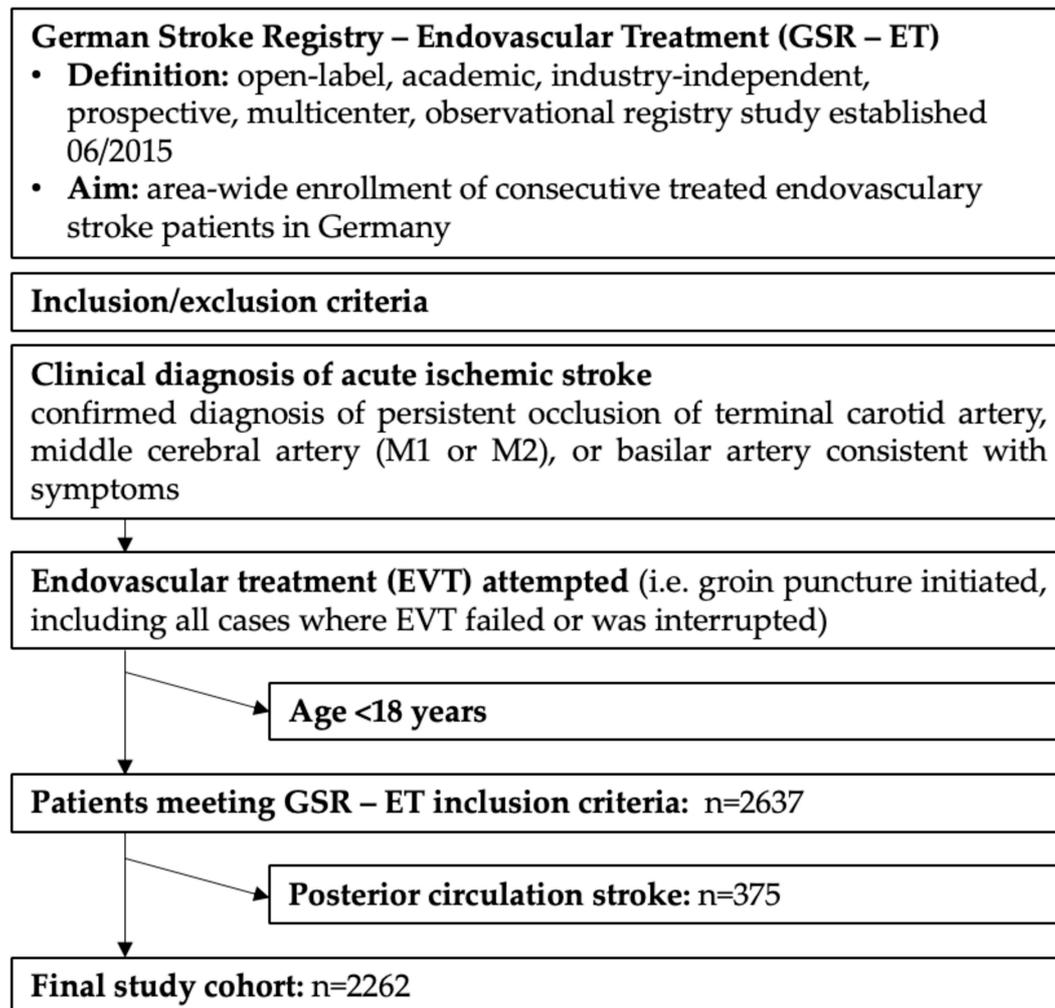


Figure 3: Flow chart of patient inclusion from the German Stroke Registry – Endovascular Treatment (GSR-ET).



TABLES

Table 1: Baseline characteristics and major outcomes of patients enrolled in the German Stroke Registry – Endovascular Treatment (GSR-ET) treated with mechanical thrombectomy for anterior circulation stroke.

BASILINE CHARACTERISTICS & MAJOR OUTCOME PARAMETERS	GSR COHORT⁶ (N=2636)
MEDIAN AGE (IQR)	75 (64–82)
WOMEN % (N)	50.4 (1328/2636)
MEDIAN NIHSS* (IQR)	15 (10–19)
MEDIAN ASPECTS	9 (7–10)
OCCLUDED VESSEL % (N)	
ANTERIOR CIRCULATION	
- M1	53.6 (1374/2565)
- M2	20.1 (516/2565)
- TACI	26.0 (666/2565)
- ACA	3.4 (86/2565)
INTRAVENOUS THROMBOLYSIS % (N)	56 (1457/2602)
GENERAL ANESTHESIA % (N)	66.5 (1674/2518)
SUCCESSFUL RECANALIZATION	83 (1857/2236)
TICI \geq 2B % (N)	
FAVORABLE OUTCOME (MRS \leq 2)	36.7 (732/1997)
(S)ICH % (N)	13.2 (349/2637) [†]
MORTALITY AT 90-DAYS	28.5 (570/1997)

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