DIRECT PRESENTATION VERSUS TRANSFER TO A COMPREHENSIVE STROKE CENTER OF PATIENTS WITH A CONTRAINDICATION FOR IV THROMBOLYSIS

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BACKGROUND

Direct presentation to a **comprehensive stroke center** (CSC):

- Reduces time to endovascular treatment (EVT)[1];
- Is associated with better functional outcome[2];
- But increases time-to-treatment for intravenous thrombolysis (IVT)[2].

This dilemma does not apply to patients with a **contraindication for IVT**.

HYPOTHESIS

Direct presentation to a CSC of patients with a contraindication for IVT is associated with reduced time to EVT and better functional outcome.

METHODS

Data source	MR CLEAN Registry
Design	Nationwide, prospective EVT cohort
Population	• EVT for large vessel occlusion of anterior circulation • Contraindication for IVT • March 2014 - June 2016
Primary outcome	Modified Rankin Scale score at 90 days

RESULTS

BASELINE CHARACTERISTICS

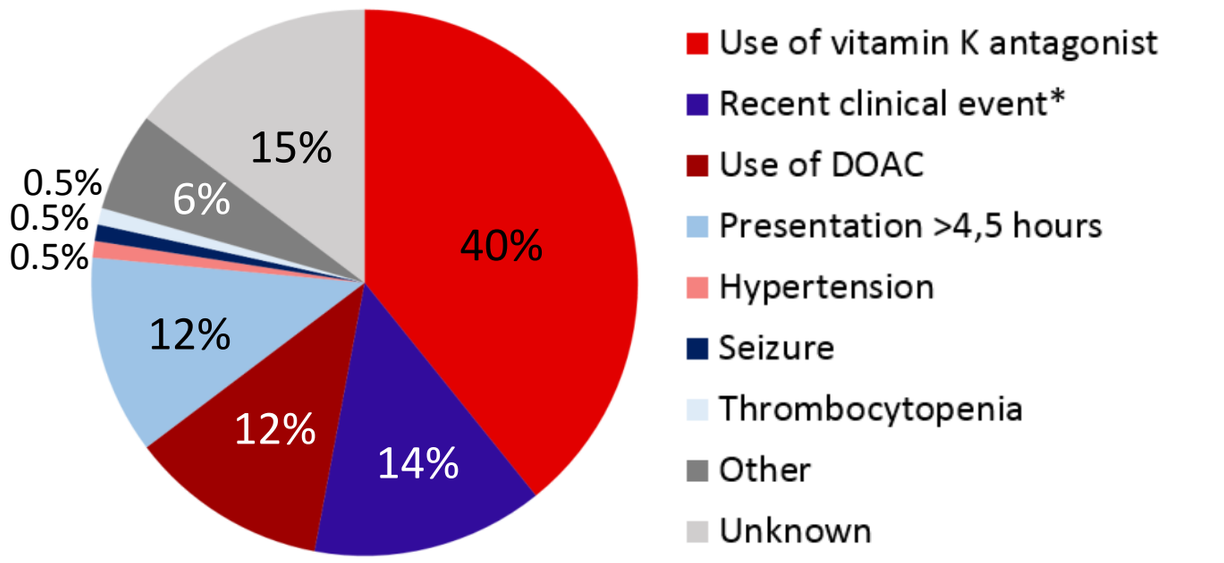
	Direct n=113	Transfer n=106	*p* value
Age (years) – mean (SD)	73 (12.4)	71 (12.4)	0.277
Pre stroke mRS – median (IQR)	1 (0-2)	0 (0-1)	0.196
NIHSS score – median (IQR)	16 (11-19)	18 (14-21)	**0.020**
Occlusion site			
ICA – no. (%)	17 (16)	35 (36)	**0.001**
M1 – no. (%)	75 (69)	56 (57)	0.082
M2 – no. (%)	14 (13)	7 (7)	0.175
Onset to first door (min.) – median (IQR)	83 (44-186)	60 (38-87)	**0.004**
Est. ambulance travel time PSC to CSC (min.) – median (IQR)	NA	17 (10-30)	NA

CSC = comprehensive stroke center, est. = estimated, ICA = internal carotid artery; IQR = interquartile range; M1 = first segment of the middle cerebral artery; M2 = second segment (after first bifurcation) of the middle cerebral artery; mRS = modified Rankin Scale; NIHSS = National Institutes of Health Stroke Scale; no. = number; PSC = primary stroke center, SD = standard deviation.

References: [1]Venema et al. Stroke, 2019. [2]Froehler et al, Circulation, 2017.

RESULTS

CONTRAINDICATIONS FOR IVT



*Recent hemorrhagic or ischemic stroke, major surgery, gastrointestinal or urogenital bleeding or head trauma.

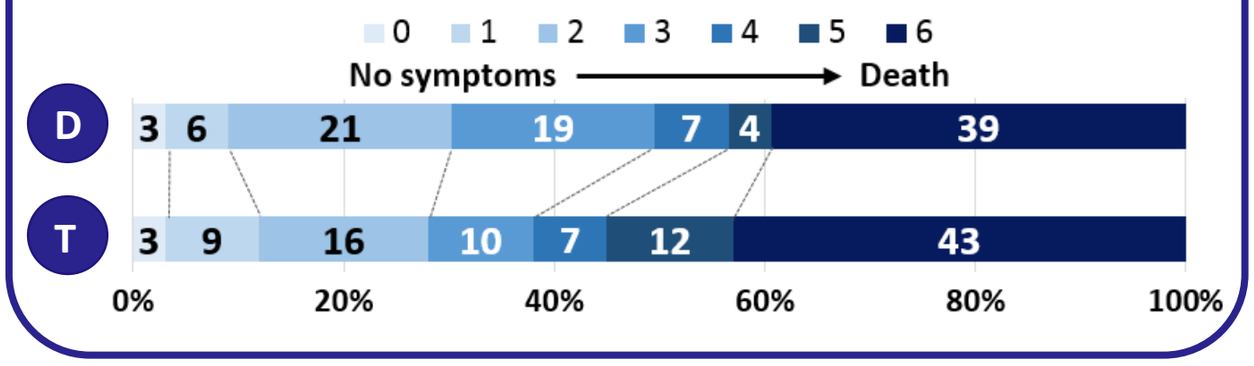
OUTCOMES

DIRECT		TRANSFER
ONSET TO GROIN		
190 MIN	Adjusted β: 56.3 (42.7-69.9)*	241 MIN
FIRST DOOR TO GROIN		
93 MIN	Adjusted β: 62.1 (48.6-75.6)†	168 MIN
MRS AT 90 DAYS		
mRS 0-2: 30%	aOR 0.94 (0.46-1.94)‡	mRS 0-2: 28%
eTICI ≥ 2b		
54%	aOR 1.06 (0.59-1.91)§	51%
sICH		
6%	aOR 1.01 (0.28-3.58)**	5%

*Adjusted for: onset-to-first-door time, baseline NIHSS, occlusion location, baseline systolic RR, pre stroke mRS, age

†Adjusted for: baseline NIHSS, occlusion location, baseline systolic RR, pre stroke mRS, age

‡Adjusted for: onset-to-first-door time, baseline NIHSS, occlusion location, baseline systolic RR, pre stroke mRS, age



§Adjusted for: onset-to-first-door time, occlusion location, age

**Adjusted for: onset-to-first-door time, baseline NIHSS, baseline systolic RR, pre stroke mRS, age

CONCLUSION

In patients who are not eligible for IVT, onset-to-treatment times were substantially better for patients directly presented to a CSC, but without a measurable effect on clinical outcome.

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