



A match made unequal: Impact of oral anticoagulants on stroke outcome following propensity score matching

J. SEETGE¹, B. CSÉKE², Z.N. KARÁDI¹, E. BOSNYÁK¹ and L. SZAPÁRY¹

¹ Department of Neurology, Stroke Unit, University of Pécs, Pécs, Hungary

² Department of Emergency Medicine, University of Pécs, Pécs, Hungary

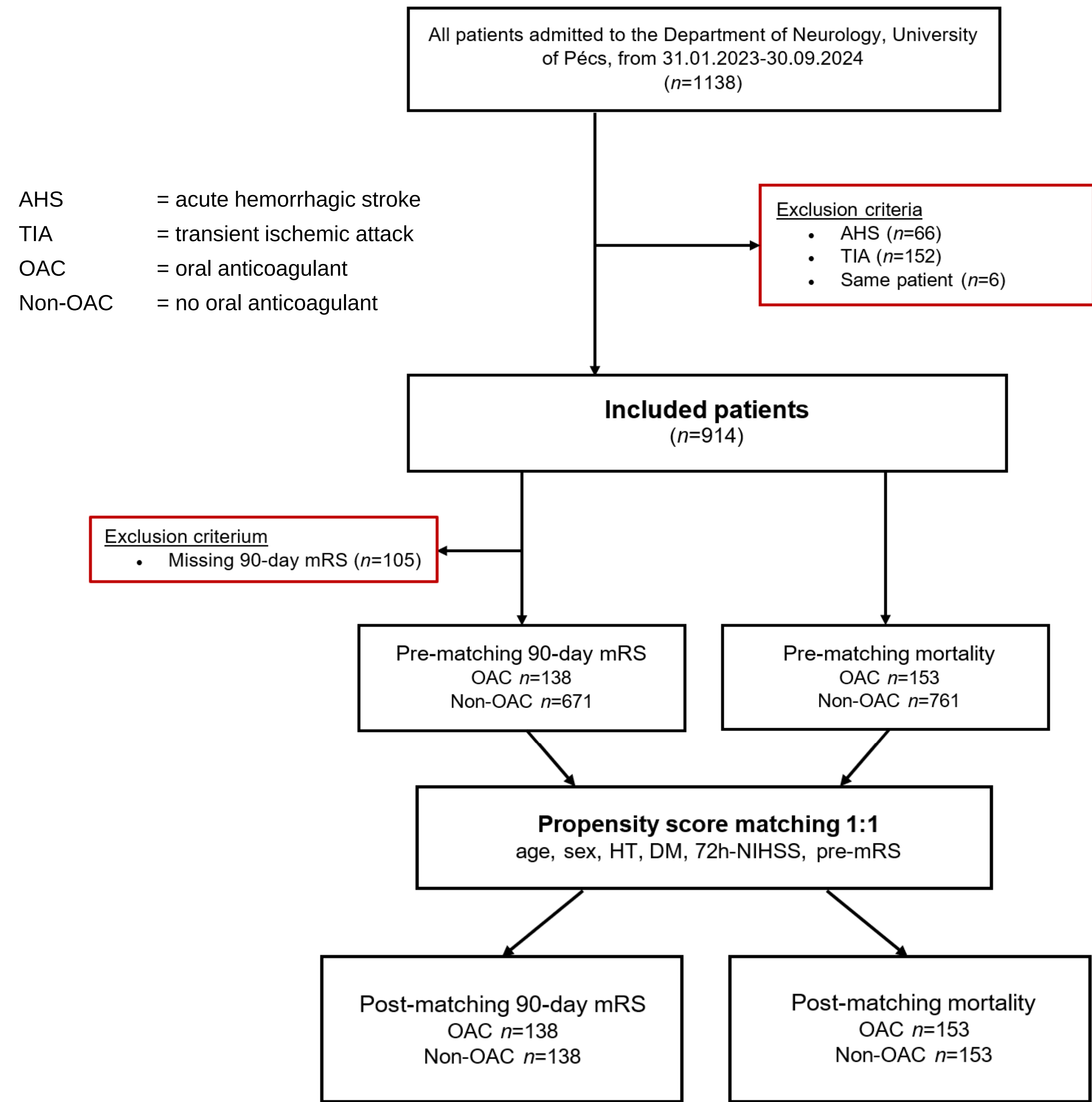
BACKGROUND AND AIMS

Oral anticoagulants (OACs) are commonly used for stroke prevention in patients with atrial fibrillation (AF), but their impact on long-term outcomes following acute ischemic stroke (AIS) remains uncertain. This study evaluated whether prior anticoagulation influences functional outcomes and mortality in AIS patients.

METHODS

A total of 914 patients admitted following an AIS from January 2023 to September 2024, were retrospectively reviewed. Patients were categorized into an anticoagulated group (OAC use, $n=153$) and a non-anticoagulated group (Non-OAC use, $n=761$). Propensity score matching was performed to balance confounding factors, including age, sex, history of hypertension or diabetes mellitus, stroke severity at 72 hours (assessed by National Institutes of Health Stroke Scale [NIHSS] score) and pre-stroke disability (based on pre-morbidity modified Rankin Scale [pre-mRS] score). Analyses were conducted on two key outcomes: 90-day mRS (modified Rankin Scale) scores and mortality.

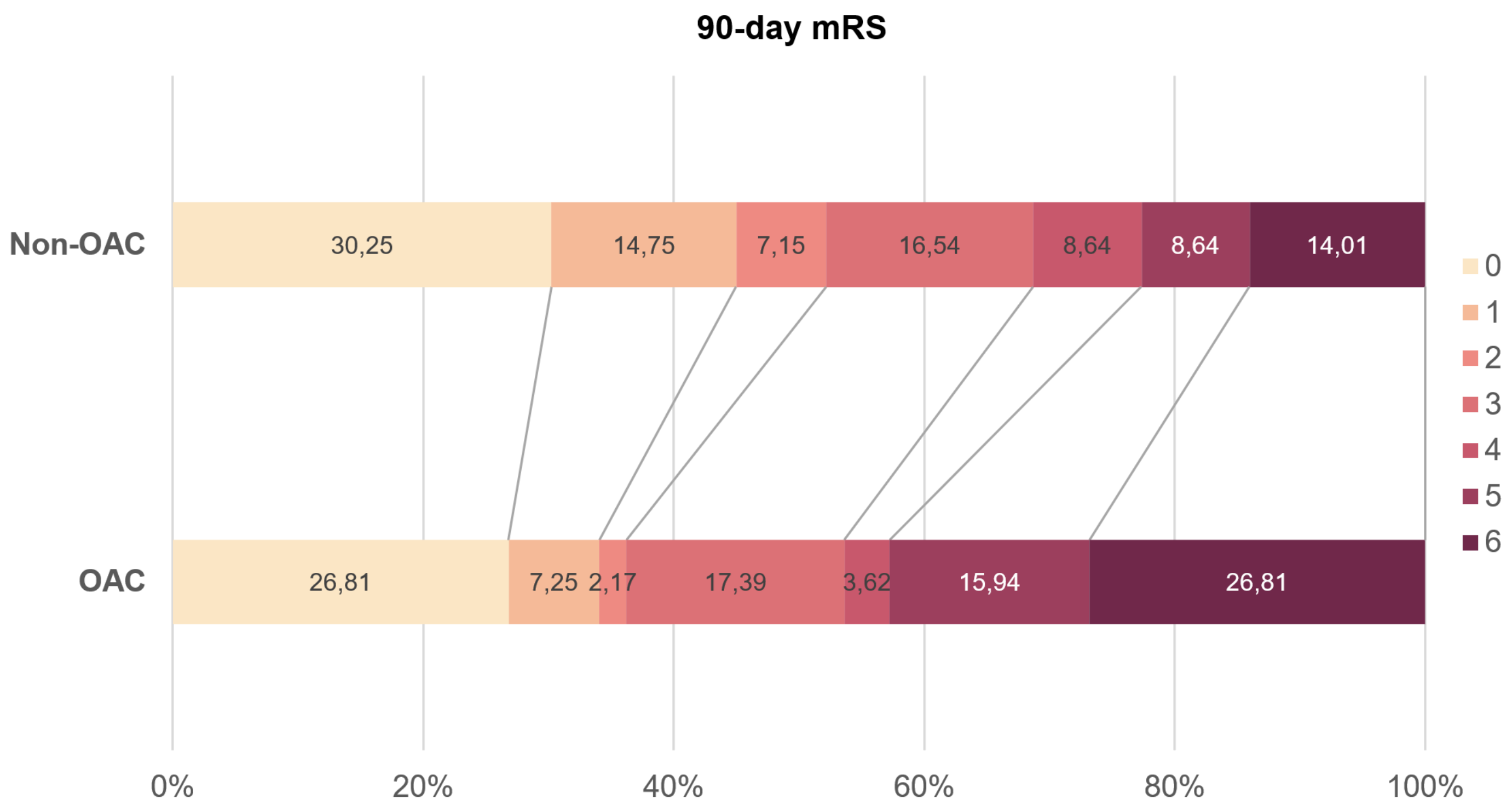
Figure 1. Flowchart of patients included in the study



RESULTS

After matching, 276 patients were analyzed for functional outcomes and 306 for mortality. Anticoagulated patients were 2.26 times more likely to have an unfavorable functional outcome (90-day mRS >2) compared to non-anticoagulated patients ($p=0.043$). No significant difference in mortality (mRS = 6) was observed between the groups ($p=0.307$). Advanced age and higher 72h-NIHSS scores were significant predictors of poor functional outcomes, regardless of anticoagulation status.

Figure 2. Distribution of 90-day mRS of 671 Non-OAC and 138 OAC patients



mRS = modified Rankin Scale, Non-OAC = no oral anticoagulant, OAC = oral anticoagulant

Table 1. Logistic regression and bootstrapping analysis for mRS 0-2 of the 90-day mRS cohort ($n=276$)

	Coefficient	Standard Error	p-Value	95% CI lower	95% CI upper	Bootstrap CI (2.5%)	Bootstrap CI (97.5%)
Constant	-6.9852	1.949	$p<0.001$	-10.806	-3.164	-12.761	-3.710
OAC use	0.8157	0.404	$p=0.043$	0.025	1.607	0.108	1.747
Sex	0.5665	0.427	$p=0.184$	0.270	1.403	-0.403	1.629
Age	0.0386	0.023	$p=0.087$	-0.006	0.083	-0.013	0.107
HT	0.2386	1.020	$p=0.815$	-1.760	2.237	-1.537	2.352
DM	0.8217	0.406	$p=0.043$	0.027	1.617	0.015	1.763
72h-NIHSS score	0.5696	0.094	$p<0.001$	0.386	0.754	0.439	0.897
pre-mRS score	1.1331	0.230	$p<0.001$	0.683	1.584	0.774	1.716

Table 2. Logistic regression and bootstrapping analysis for mRS = 6 of the mortality cohort ($n=306$)

	Coefficient	Standard Error	p-Value	95% CI lower	95% CI upper	Bootstrap CI (2.5%)	Bootstrap CI (97.5%)
Constant	-11.2061	2.250	$p<0.001$	-15.615	-6.797	-28.148	-7.902
OAC use	0.3812	0.373	$p=0.307$	-0.350	1.113	-0.393	1.227
Sex	-0.7150	0.387	$p=0.065$	-1.473	0.043	-1.648	-0.001
Age	0.1140	0.026	$p<0.001$	0.064	0.164	0.072	0.194
HT	0.1066	1.079	$p=0.921$	-2.007	2.221	-1.706	15.508
DM	0.5031	0.396	$p=0.203$	-0.272	1.279	-0.324	1.376
72h-NIHSS score	0.1937	0.029	$p<0.001$	0.136	0.251	0.152	0.273
pre-mRS score	0.0786	0.134	$p=0.557$	-0.184	0.341	-0.233	0.380

mRS = modified Rankin Scale, OAC = oral anticoagulant, HT = hypertension, DM = diabetes mellitus, NIHSS = National Institutes of Health Stroke Scale

CONCLUSION

Prior anticoagulation in AIS patients was associated with an unfavorable functional outcome without reducing mortality. While OACs remain essential for stroke prevention in AF patients, these findings suggest that the benefit of stroke prevention must be weighed against the risk of increased long-term disability following AIS.

ACKNOWLEDGEMENTS

Eszter Jozifek
Dorottya Lőcsei
Gabriella Dervár-Géra
Laura Szóts
Prof. Dr. József Janszky

CONTACT INFORMATION

Jessica Seetge
Dr. Balázs Cséke
Dr. Zsófia Nozomi Karádi
Dr. Edit Bosnyák
Prof. Dr. László Szapáry

j.seetge@gmx.de
cseke.balázs@pte.hu
karadi.zsofia@pte.hu
bosnyak.edit@pte.hu
szapary.laszlo@pte.hu

