MORTALITY RATES FOR NOAC VERSUS VKA ASSOCIATED INTRACEREBRAL HEMORRHAGE

A SWEDISH STROKE REGISTER STUDY

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Conclusion

In the largest study to date on anticoagulant-associated ICH, we found no significant difference in mortality outcome at 90 days between NOAC-ICH versus VKA-ICH.

Results

We included 2483 patients; 300 with NOAC-ICH and 2183 with VKA-ICH. In both groups, mean age was 79 years, and 58% were male. No significant difference was found between NOAC-ICH and VKA-ICH for all-cause 90-day mortality (44.3% NOAC-ICH versus 42.6% VKA-ICH; p=0.54, HR=0.93; 95% confidence interval (CI): 0.776–1.123). Factors predicting death were increased age (HR=1.027; 95%CI: 1.017–1.037), previous stroke (HR=1.21; 95%CI: 1.06-1.38), and reduced LOC (drowsy: HR=3.48; 95%CI: 2.86–4.23; comatose: HR=12.27; 95%CI: 10.13–14.87).

Table 1. Baseline characteristics of 2483 patients with NOAC- or VKA-associated ICH. Proportion of missing data varied between 0 and 2% for all variables, except for ADL dependency prior to stroke (3.6%).

Variables	NOAC-ICH (n=300) n (%)	VKA-ICH (n=2183) n (%)	p-value
Mean age	79.0 (8.4)*	79.1 (8.8)*	0.85
Pre-stroke dependent	113 (37.7)	651 (29.8)	**0.003**
Diabetes	61 (20.3)	467 (21.4)	0.69
Hypertension	228 (76.0)	1655 (75.8)	0.96
Atrial fibrillation	254 (84.7)	1798 (82.4)	0.32
Previous stroke	106 (35.3)	571 (26.3)	**0.001**
Level of consciousness			**0.08**
Alert	161 (54.0)	1297 (60.2)	
Drowsy	80 (26.8)	465 (21.6)	
Comatose	57 (19.1)	394 (18.3)	

*Standard deviation of the mean

Abbreviations: ICH = intracerebral hemorrhage, NOAC = non-vitamin K antagonist oral anticoagulant, VKA = vitamin K antagonist, ADL = activities of daily life.

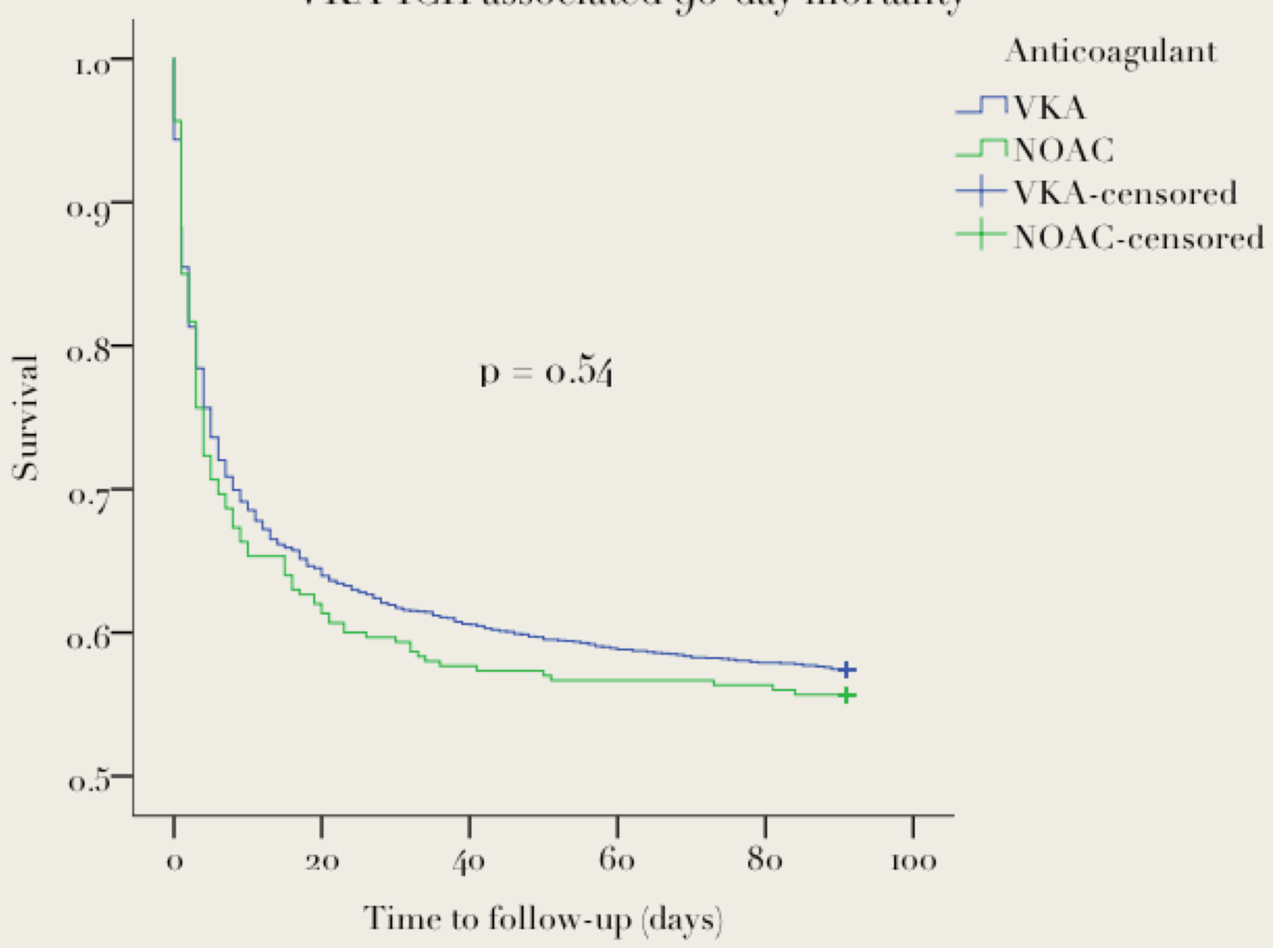
Objective

Intracerebral hemorrhage (ICH) is the most serious adverse effect of treatment with oral anticoagulants. Prognostic data after ICH associated with novel oral anticoagulants (NOAC) compared to vitamin-K antagonists (VKA) are sparse. We compared 90-day survival outcome following NOAC-ICH versus VKA-ICH using data from the Swedish Stroke Register (Riksstroke).

Methods

Using data from Riksstroke and the Swedish Causes of Death Register between 2012 and 2016, we compared all-cause 90-day mortality for patients with NOAC-ICH versus VKA-ICH using Kaplan-Meier survival analysis and Log-rank test. Cox regression, with adjustment for age, sex, previous stroke and level of consciousness (LOC) on admission, was used to estimate hazard ratios (HR) for 90-day mortality.

Figure 1 Kaplan Meier survival curve comparing NOAC-ICH versus VKA-ICH associated 90-day mortality



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