Intravenous thrombolysis in patients with ischaemic stroke and recent direct oral anticoagulants intake – an international collaboration

Background

Major current Guidelines make strong recommendations against the use of IV alteplase in patients taking direct thrombin inhibitors or direct factor Xa inhibitors (DOACs) if they have been taken ≤48 hours and no adequate laboratory testing is available. Recommendations are made on a very low quality of evidence.

For patients with acute ischaemic stroke of < 4.5 h duration, who used a NOAC during the last 48 h before stroke onset, and for whom there is no specific coagulation tests available (i.e. calibrated anti-Xa-activity for factor Xa inhibitors, thrombin time for dabigatran, or the NOAC blood concentrations), we suggest no intravenous thrombolysis.

Quality of evidence: Very Low
Strength of recommendation: Strong

Methods

- International, multi-centre, retrospective cohort study (CRD42021277825)
- Investigator-initiated, no commercial funding
- Patients with ischaemic stroke receiving IVT;
- comparison of patients on prior DOAC therapy (confirmed last intake <48h or unknown) vs. patients without prior DOAC therapy (both with/without thrombectomy).

**Main outcome:** symptomatic intracerebral haemorrhage (sICH)*

19616 patients with stroke without prior DOAC therapy (controls)
832 patients with stroke with prior DOAC therapy (last intake <48hours or unknown)

- 252 (30%) received DOAC reversal
- 355 (43%) no reversal or DOAC-level check
- 225 (27%) were selected on DOAC-levels
Results | Primary Outcome

sICH within 24 ± 12 hours after IVT administration

Overall, 879/20448 patients (4.5%; 95% CI, 4.2%–4.8%) developed sICH

Unadjusted rates: DOAC, 2.5% (95%CI, 1.6%–3.8%) vs. Control, 4.5% (95% CI, 4.2%–4.8%)

Information on sICH was available for all DOAC patients (100%) and 19312 (98.4%) of controls.

Adjustment for: stroke severity and other baseline sICH predictors

Adjusted OR 0.49, 95% CI 0.30 to 0.80, p = 0.005
Conclusion | Contributors | Thank You

- So far largest study addressing IVT in DOAC patients with confirmed last intake ≤ 48 hours or unknown
- We did not find any evidence for harm for IVT in ischaemic stroke patients with recent DOAC intake and this finding was consistent with different selection strategies
- Despite inherent limitations, given the established benefits of IVT and no signal for harm, these results support the use of IVT in patients on prior DOAC selected by any of the used method

Manuscript is under preparation. Results may change during evaluation process.