Workshop 3: Anticoagulants and antiplatelet drugs

P. Widimsky: Antithrombotic therapy in the acute phase of ischemic stroke
Occasional speakers honoraria / advisory boards:
- AstraZeneca
- Bayer
- Boehringer Ingelheim
- Daiichi Sankyo
- Novartis
- Pfizer
- Servier
Case 1:
Previously healthy female 45 years, NIHSS 14
90 minutes after symptom onset
direct CBT (no thrombolysis)
Case 1: Antithrombotic medication

- Prehospital / pre-procedural: 0
- Periprocedural: Heparin 1800 U (= 30 U / kg)
- First 12 hours till control CT: 0
- Very small ischemia at control CT AND clinically functional recovery AND no cause of stroke (ESUS): ASA 100 mg / day started on day 1.

- ? ASA or NOAC for secondary prevention in young patients with ESUS ?
Case 2:
Female 78 years with AF on ASA, NIHSS 22
4 hours after symptom onset
Thrombolysis 45 minutes before angiography
Case 2: Antithrombotic medication

- Pre-procedural: rt-PA 70 mg iv. (0,9 mg/kg)
- Periprocedural: 0 (rt-PA infusion completed during the initial minutes of intervention)
- First 18 hours till control CT: 0
- Large ischemia at control CT AND clinically minimal recovery AND atrial fibrillation: NO antithrombotics given for the next 3 days
- Rivaroxaban 15 mg / day started on day 5 along with slow clinical improvement and no ICH on CT

? When to (re)start OAC in large stroke AND atrial fibrillation?
Case 3:
Male 83 years, NIHSS 20
5 hours after symptom onset
Carotid stenting
Case 3: Antithrombotic medication

- Pre-procedural: 0
- Periprocedural: Kardegic 0.5 g iv., Heparin 2000 U (25 U/kg) iv.
- First 12 hours till control CT: Clopidogrel 75 mg p.o.
- Small ischemia at control CT AND clinically very good recovery AND carotid stent: ASA 100 mg + clopidogrel 75 mg started on day 1.

- ? What is the optimal antithrombotic strategy in carotid stenting during the acute stroke?
- ? Stent implantation in the acute phase OR acute balloon angioplasty with deferred stenting few days later?
Antithrombotics in acute stroke treated with endovascular thrombectomy

• No data from randomized trials

• Empiric recommendations only
Pre-hospital & pre-intervention phase

- No antithrombotics prior to the first imaging (CT / MR / DSA)

- Intracranial bleeding excluded with imaging: immediate thrombolysis if indication criteria fulfilled
Periprocedural phase

- Iv. rtPA infusion (initiated prior to intervention) may be completed during the intervention

- No other antithrombotics when rtPA is used

- In direct thrombectomy (without thrombolysis) low dose heparin (20-30 U/kg iv. bolus)

- If carotid stenting is performed, Kardegiec (0.5 g iv.) + low dose heparin
First 48-hours after intervention

- Wait till control CT (MR) excludes ICH and defines ischemic core size
- Search for stroke cause (cardioembolic vs. atherosclerotic vs. other)
- ASA if presumed stroke cause was atherosclerosis
- DAPT if stroke was treated with carotid stenting
- OAC if presumed stroke cause was cardioembolic
- OAC or ASA in ESUS
Timing of antithrombotic treatment (re)start

- TIA or minor ischemic stroke: immediately (day 1)

- Moderate ischemic stroke: between days 3-10 based on stroke severity and imaging results

- Severe ischemic stroke: after 10-14 days
Initiation or continuation of anticoagulation in atrial fibrillation patients after a stroke or transient ischaemic attack

**Patient with atrial fibrillation and acute TIA or ischaemic stroke**
Exclusion of intracerebral bleeding by CT or MRI

- **TIA**
- **Mild stroke** (NIHSS < 8)
- **Moderate stroke** (NIHSS 8–15)
- **Severe stroke** (NIHSS ≥ 16)

**Consider additional clinical factors favouring early / delayed initiation of OAC**

**Factors favouring early initiation of OAC:**
- Low NIHSS (<8):
- Small/no brain infarction on imaging
- High recurrence risk, e.g. cardiac thrombus
- No need for percutaneous endoscopic gastrostomy
- No need for carotid surgery
- No haemorrhagic transformation
- Clinically stable
- Young patient
- Blood pressure is controlled

**Factors favouring delayed initiation of OAC:**
- High NIHSS (≥8):
- Large/moderate brain infarction on imaging
- Needs gastrostomy or major surgical intervention
- Needs carotid surgery
- Haemorrhagic transformation
- Neurologically unstable
- Elderly patient
- Uncontrolled hypertension

**Start OAC**
- 1 day after acute event
- 3 days after acute event
- 6 days after acute event
- 12 days after acute event

**Evaluate haemorrhagic transformation by CT or MRI at day 6**
**Evaluate haemorrhagic transformation by CT or MRI at day 12**

This approach is based on consensus within the Task Force, not on evidence.
NIHSS = National Institutes of Health Stroke Scale

www.escardio.org/guidelines