**WSO Brain & Heart Task Force Position Statement on The Diagnosis and Management of Patients Atrial Fibrillation and a Recent Ischemic Stroke or TIA**

SUPPLEMENTARY ONLINE FILE

**Table S1** Systematic search terms

**Table S2** Studies of prolonged cardiac monitoring in patients with ischemic stroke and TIA

**Table S3** Association between cardiac troponin and AF detection in patients with ischemic stroke or TIA

**Table S4** Subanalysis from NOAH-AFNET 6 and ARTESIA for ischemic stroke recurrence and major bleeding in patients with prior stroke or TIA

**Table S5** Observational studies on timing of anticoagulation post-ischemic stroke

**Table S6** Ongoing studies covering the topics covered in each section of this manuscript

**Table S1.** Systematic search terms

As of May 22, 2024

**Epidemiology of AF-related ischemic stroke (e.g. incidence, prevalence)**

(stroke risk[Ti] OR risk of stroke stroke[Ti] OR stroke incidence[Ti] OR incidence of stroke[Ti] OR stroke rate\*[Ti] OR rate of stroke OR ischemic stroke risk[Ti] OR risk of ischemic stroke stroke[Ti] OR ischemic stroke incidence[Ti] OR incidence of ischemic stroke[Ti] OR ischemic stroke rate\*[Ti] OR rate of ischemic stroke OR ischaemic stroke risk[Ti] OR risk of ischaemic stroke stroke[Ti] OR ischaemic stroke incidence[Ti] OR incidence of ischaemic stroke[Ti] OR ischaemic stroke rate\*[Ti] OR rate of ischaemic stroke) AND (atrial fibrillation[Ti])

**Titles since inception (1968):** 5,262

**Titles since 2020:** 1,849

**Screening for AF in stroke and TIA patients**

(loop record\*[Ti] OR cardiac monitor\*[Ti] OR Holter[Ti] OR atrial fibrillation screening[Ti] OR screening for atrial fibrillation[Ti] OR prolonged monitor\*[Ti] OR continuous monitor\*[Ti]) AND stroke[Tiab] AND atrial fibrillation[Tiab]

**Titles since inception (1968):** 738

**Titles since 2020:** 386

**The role of biomarkers in AF detection and AF-related stroke risk stratification**

(Biomarker\*[Tiab] OR natriuretic peptide\*[Ti] OR troponin[Ti] OR \*BNP\*[Ti] OR \*ANP\*[Ti]) AND atrial fibrillation[Tiab]

**Titles since inception (1986):** 2,651

**Titles since 2020:** 1,224

**Classification of AF in stroke and TIA patients**

(classification[Tiab] OR type\*[Tiab] OR timing[Tiab] OR time OR[Tiab]) AND stroke[Tiab] AND atrial fibrillation[Tiab]

**Titles since inception (1973):** 3,050 / 3,101 on July 18, 2024

**Titles since 2020:** 1,364 / 1,415 on July 18, 2024

**Stroke recurrence rates and outcomes in subtypes of AF based on timing of diagnosis**

(classification[Tiab] OR type\*[Tiab] OR timing[Tiab] OR time OR[Tiab]) AND stroke[Tiab] AND atrial fibrillation[Tiab] AND (recurren\*[Tiab] OR outcome\*[Tiab] OR prognos\*[Tiab] OR enpoint\*[Tiab])

**Titles since inception (1978):** 1,571

**Titles since 2020:** 787

**Anticoagulation in patients with SCAF and previous ischemic stroke (ARTESIA & NOAH):**

(ARTESIA[Tiab] OR NOAH[Tiab] OR SCAF[Tiab] OR AHRE[Tiab] OR subclinical atrial fibrillation[Tiab] OR newly detected atrial fibrillation[Tiab] OR atrial high rate episode\*[Tiab] OR atrial fibrillation detected after stroke[Tiab] OR AFDAS[Tiab]) AND (anticoagula\*[Tiab] OR antithrombotic\*[Tiab] OR vitamin K antagonist\*[Tiab] OR apixaban[Tiab] OR rivaroxaban[Tiab] OR edoxaban[Tiab] OR dabigatran[Tiab] OR warfarin[Tiab] OR direct oral anticoagulant\*[Tiab] OR novel anticoagulant\*[Tiab] OR Phenprocoumon[Tiab]) AND stroke[Tiab]

**Titles since inception (2006):** 118

**Titles since 2020:** 60

**Left atrial appendage closure**

atrial appendage[Tiab] AND (occlu\*[Tiab] OR closure[Tiab] OR ligation[Tiab] OR removal[Tiab] OR carotid filter[Tiab] OR carotid diverter[Tiab] OR arterial filter[Tiab] OR arterial diverter[Tiab]) AND atrial fibrillation[Tiab]

**Titles since inception (2006):** 2,543

**Titles since 2020:** 1,311

**Factor XI inhibitors for stroke prevention in AF**

(Factor XI[Tiab] OR Milvexian[Tiab] OR Asundexian[Tiab] OR osocimab[Tiab] OR abelacimab[Tiab] OR xisomab\*[Tiab] OR MK-2060[Tiab] OR Fesomersen[Tiab] OR ionis\*[Tiab]) AND (atrial fibrillation[Tiab] OR stroke[Tiab])

**Titles since inception (1983):** 168

**Titles since 2020:** 96

**Timing of initiation of anticoagulation**

(Time[Tiab] OR timing[Tiab] OR initiation[Tiab] OR start\*[Tiab]) AND anticoagula\*[Tiab] AND atrial fibrillation[tiab] AND \*stroke\*[Tiab]

**Titles since inception (1984):** 2,765

**Titles since 2020:** 1,049

**Management of patients with breakthrough strokes (already on anticoagulants)**

(breakthrough stroke\*[Tiab] OR breakthrough cerebrovascular[Tiab] OR stroke on anticoagul\*[Tiab] OR stroke while on anticoagul\*[Tiab] OR stroke despite anticoagul\*[Tiab] OR stroke despite treatment with anticoagul\*[Tiab] OR stroke while taking anticoagul\*[Tiab] OR stroke while receiving anticoagul\*[Tiab] OR stroke receiving anticoagul\*[Tiab] OR stroke receiving anticoagul\*[Tiab] OR stroke on direct anticoagul\*[Tiab] OR stroke while on direct anticoagul\*[Tiab] OR stroke despite direct anticoagul\*[Tiab] OR stroke despite treatment with direct anticoagul\*[Tiab] OR stroke while taking direct anticoagul\*[Tiab] OR stroke while receiving direct anticoagul\*[Tiab] OR stroke receiving direct anticoagul\*[Tiab] OR stroke receiving direct anticoagul\*[Tiab] OR stroke on novel anticoagul\*[Tiab] OR stroke while on novel anticoagul\*[Tiab] OR stroke despite novel anticoagul\*[Tiab] OR stroke despite treatment with direct anticoagul\*[Tiab] OR stroke while taking novel anticoagul\*[Tiab] OR stroke while receiving novel anticoagul\*[Tiab] OR stroke receiving novel anticoagul\*[Tiab] OR stroke receiving novel anticoagul\*[Tiab] OR stroke on warfarin[Tiab] OR stroke while on warfarin[Tiab] OR stroke despite warfarin[Tiab] OR stroke despite treatment with warfarin[Tiab] OR stroke while taking novel warfarin[Tiab] OR stroke while receiving warfarin[Tiab] OR stroke receiving warfarin[Tiab] OR stroke receiving warfarin[Tiab] OR stroke on rivaroxaban[Tiab] OR stroke while on rivaroxaban[Tiab] OR stroke despite rivaroxaban[Tiab] OR stroke despite treatment with rivaroxaban[Tiab] OR stroke while taking novel rivaroxaban[Tiab] OR stroke while receiving rivaroxaban[Tiab] OR stroke receiving rivaroxaban[Tiab] OR stroke receiving rivaroxaban[Tiab] OR stroke on apixaban[Tiab] OR stroke while on apixaban[Tiab] OR stroke despite apixaban[Tiab] OR stroke despite treatment with apixaban[Tiab] OR stroke while taking novel apixaban[Tiab] OR stroke while receiving apixaban[Tiab] OR stroke receiving apixaban[Tiab] OR stroke receiving apixaban[Tiab] OR stroke on edoxaban[Tiab] OR stroke while on edoxaban[Tiab] OR stroke despite edoxaban[Tiab] OR stroke despite treatment with edoxaban[Tiab] OR stroke while taking novel edoxaban[Tiab] OR stroke while receiving edoxaban[Tiab] OR stroke receiving edoxaban[Tiab] OR stroke receiving edoxaban[Tiab] OR stroke on dabigatran[Tiab] OR stroke while on dabigatran[Tiab] OR stroke despite dabigatran[Tiab] OR stroke despite treatment with dabigatran[Tiab] OR stroke while taking novel dabigatran[Tiab] OR stroke while receiving dabigatran[Tiab] OR stroke receiving dabigatran[Tiab] OR stroke receiving dabigatran[Tiab]) AND atrial fibrillation[Tiab]

**Titles since inception (1985):** 5,177

**Titles since 2020:** 1,675

**Secondary prevention options in AF patients with a previous intracranial haemorrhage**

(Prevention[Tiab] OR preventive management[Tiab] OR preventive therapy[Tiab] OR preventive treatment[Tiab] OR preventative management[Tiab] OR preventative therapy[Tiab] OR preventative treatment[Tiab] OR anticoagul\*[Tiab] OR atrial appendage[Tiab]) AND atrial fibrillation[Tiab] AND (intracerebral hemorrhage[Tiab] OR intracerebral haemorrhage[Tiab] OR intracranial hemorrhage[Tiab] OR intracranial bleed\*[Tiab] OR intraparenchymal hemorrhage[Tiab] OR intraparenchymal haemorrhage[Tiab] OR parenchymal haemorrhage[Tiab] parenchymal bleed\*[Tiab] OR cerebral hemorrhage[Tiab] OR cerebral haemorrhage[Tiab] OR cerebral bleed\*[Tiab])

**Titles since inception (1984):** 134

**Titles since 2020:** 43

**Table S2**. Studies of prolonged cardiac monitoring in patients with ischemic stroke and TIA

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Population** | **n** | **Cardiac monitoring** | **Timing of PCM** | **Follow-up** | **AFDAS detection (%)** | **Primary Endpoint** | **Detection difference (95%CI)** | **P value** |
| **MonDAFIS1** | IS/TIA | 3465 | ≤7-d Holter | 3 d | 12m | 9.7 | % on OACs | OR 1.2 (0.9-1.6) | 0.14 |
| **FIND-AF2** | IS | 398 | 10-d Holter x3 | ≤7 d | 6m | 13.5 | New AF | AD 9.0 (3.4-14.5) | 0.002 |
| **EMBRACE3** | Cryptogenic IS/TIA | 572 | 30-d ELR | 6 mo | 3m | 16.1 | New AF | AD 12.9 (8.0-17.6) | <0.001 |
| **CRYSTAL AF4** | Cryptogenic IS | 441 | ICM | 3 mo | 6m | 8.9 | New AF | HR 6.4 (1.9-21.7) | <0.001 |
|  |   |   | ICM |  | 12m | 12.4 |  | HR 7.3 (2.6-20.8) | <0.001 |
| **PER DIEM5** | IS/TIA | 300 | ICM | 6 mo |   | 15.3 | New AF | AD 10.7 (4.0-17.3) | 0.003 |
|   |   |   | 30-d ELR |  |   | 4.7 |  |  |   |
| **STROKE-AF6** | LVD or SVD IS | 492 | ICM | 10 d | 12m | 12.1 | New AF | HR 7.4 (2.6-21.3) | <0.001 |

**IS:** ischemic stroke. **TIA:** transient ischemic attack. **ICM:** implantable cardiac monitor. **AFDAS:** atrial fibrillation detected after stroke. **AD:** absolute difference. **HR:** hazard ratio. **OR:** odds ratio. **LVD:** large vessel disease. **SVD:** small vessel disease. **OACs:** oral anticoagulants. **Timing of PCM:** time between qualifying stroke and TIA and randomization into a clinical trial of prolonged cardiac monitoring.

**Table S3.** Association between cardiac troponin and AF detection in patients with ischemic stroke or TIA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Study** | **Troponin type** | **Patients** | **AF with normal Troponin** | **AF with high Troponin** | **AUC** |
| Bugnicourt et al. 20107 | TnI | 402 | 3.7% | 13.2% | 0.662 |
| Beaulieu-Boire et al. 20138 | TnI | 408 | 9.7% | 34.7% | NA |
| Lasek-Bal et al. 20149 | TnI | 1,068 | 4.7% | 15.4% | NA |
| Ward et al. 201510 | TnI | 185 | 6.1% | 30.0% | NA |
| Scheitz et al. 201511 | hs-TnT | 1,228 | – | – | 0.660 |
| Naess et al. 201812 | hs-TnT | 1,239 | 28.0% | 8.0% | NA |
| Tancin Lambert et al. 202313 | hs-TnT | 162 | – | – | 0.697 |
|  | hs-TnI | 100 | – | – | 0.650 |

**TnI:** Troponin I. **hs-TnI:** high-sensitivity Troponin I. **hs-TnT:** high-sensitivity Troponin T.

**Table S4.** Subanalysis from NOAH-AFNET 6 and ARTESIA for ischemic stroke recurrence and major bleeding in patients with prior stroke or TIA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study** | **Population with prior IS or TIA** | **Events (rate)** | **Hazard ratio (95%CI)** | **P value** **for interaction**  |
|  | **DOACs**  | **Control**  |  |
| **NOAH-AFNET 6**14 | 253 of 2536 |  |  |  |  |
| **Ischemic or unknown stroke** |  |  |  |  | 0.82 |
|  Prior stroke or TIA |  | 4 (1.6) | 6 (2.3) | 0.7 (0.2–2.4) |  |
|  No prior stroke or TIA |  | 18 (0.8) | 21 (0.9) | 0.8 (0.4-1.6) |  |
| **Major bleeding** |  |  |  |  | 0.34 |
|  Prior stroke or TIA |  | 8 (3.2) | 2 (0.8) | 4.3 (0.9-20.1) |  |
|  No prior stroke or TIA |  | 45 (2.0) | 23 (1.0) | 1.9 (1.2-3-2) |  |
| **ARTESiA**15 | 346 of 4012 |  |  |  |  |
| **Ischemic or unknown stroke** |  |  |  |  | 0.43 |
|  Prior stroke or TIA |  | 7 (4.1) | 15 (8.6) | 0.47 (0.19-1.16) |  |
|  No prior stroke or TIA |  | 40 (2.2) | 57 (3.1) | 0.69 (0.46-1.03) |  |
| **Major bleeding** |  |  |  |  | 0.42 |
|  Prior stroke or TIA |  | 13 (7.6) | 7 (4.0) | 1.94 (0.77-4.87) |  |
|  No prior stroke or TIA |  | 93 (5.0) | 71 (3.9) | 1.30 (0.95-1.77) |  |

**Table S5.** Observational studies on timing of anticoagulation post-ischemic stroke

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Study type** | **Patients** | **Early** | **Late** | **Recurrent AIS****Risk (95% CI)** | **Intracranial hemorrhage****Risk (95% CI)** |
| Seiffge et al. 201616 | Prospective | 204 | ≤7 days | >7 days | 5.1% vs. 9.3%¶ | 0% vs 0%¶ |
| Yaghi et al. 202017 | Retrospective | 1,289 | 0-3, 4-14, >14 days | OR 1.49 (0.50-4.43)† | OR 0.76 (0.36-1.62)**‡** |
| De Marchis et al. 202218 | Retrospective | 2,250 | ≤5 days | >5 days | aHR 1.2 (0.5-2.9) | aHR 6.0 (0.6-56.3) |
| Kimura et al. 202219 | Retrospective | 2,501 | 1-2-3-4 days**\*** | aHR 0.54 (0.27-0.99) | aHR 0.66 (0.09-3.39) |
| Grosse et al. 202320 | Prospective | 3,312 | ≤7 days | >7 days | 3.3% vs. 4.4%§ | 0.5% vs. 0.6%§ |
| Sharobeam et al. 202421 | Prospective | 208 | <4 days | ≥4 days | 8% vs. 17%**\*\*** | 32% vs. 22%**⧺** |

¶ Annual rate of events among patients receiving direct oral anticoagulants: early (≤7 days) vs late (>7 days) initiation groups.

† 4-14 days compared to 0-3 days.

**‡** 4-14 days compared to >14 days.

**\*** Above or below the median for each 1-2-3-4 category.

§ Events per 10,000 treatment days in patients receiving dabigatran: early (≤7 days) vs late (>7 days) initiation groups.

**⧺**Proportion with hemorrhagic transformation on magnetic resonance imaging (early vs. late).

\*\* Proportion with acute brain infarcts on diffusion weighted imaging (early vs. late).

**Table S6.** Ongoing RCTs and Observational Studies

**AF SCREENING**

**DefenseElderly**

* **Population:** 300 patients with ESUS
* **Intervention:** ICM
* **Primary Endpoint:** Paroxysmal AF episodes > 30 seconds detected with intermittent recordings or ≥ 2 minutes during ICM within 6 months
* **NCT number:** NCT04285918
* **Related section:** AF screening
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Observational (prospective cohort)

**CARDIOSTROKE**

* **Population:** 405 patients with ischemic stroke or TIA
* **Intervention:** ECG for 3 weeks + self-monitoring of BP and self-titration of antihypertensive medication assisted with a mobile device app
* **Primary Endpoint:** New dx of AF (>30s) and change in BP within 12 months
* **NCT number:** NCT03710902
* **Related section:** AF screening
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

**Yield of Implantable Cardiac Monitoring Device in Patients With Acute Ischemic Stroke**

* **Population:** 200 patients IS or TIA
* **Intervention:** ICM (Reveal LINQTM)
* **Primary Endpoint:** Paroxysmal atrial fibrillation > 120 seconds for 3 years
* **NCT number:** NCT05494034
* **Related section:** AF screening
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Observational (prospective cohort)

**REMOTE**

* **Population:** 225 patients with cryptogenic IS or TIA
* **Intervention:** PPG-based mHealth on smartphone + Holter for 7 days + 24h BP for 4 weeks
* **Primary Endpoint:** AF detection with mHealth vs ILR within 6 months
* **NCT number:** NCT05006105
* **Related section:** AF screening
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

**DELTA**

* **Population:** 500 patients with IS
* **Intervention:** Wearable wristband model (MOTO 360 smartwatch)
* **Primary Endpoint:** Sensitivity and specificity for detecting AF with PPG and the algorithm concordance index or c-index for predicting AF compared with EHR data
* **NCT number:** NCT05795842
* **Related section:** AF screening
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Observational (case-only prospective)

**PROVE-AF**

* **Population:** 320 patients IS or TIA of undetermined etiology
* **Intervention:** Cardiac ECG patch within 24h
* **Primary Endpoint:** Detection of newly diagnosed AF or atrial flutter within 24 hours
* **NCT number:** NCT05082467
* **Related section:** AF screening
* **Current study stage:** Active (not recruiting)
* **Study type:** Observational (prospective cohort)

**SMARTTHUNDER**

* **Population:** 100 patients with cryptogenic stroke
* **Intervention:** ECG smartwatch and Holter monitoring for up to 1 year
* **Primary Endpoint:** AF detected by ECG smartwatch (ICM data will be analyzed for confirming the result)
* **NCT number:** NCT05565781
* **Related section:** AF screening
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

**AF-SPICE**

* **Population:** 3300 patients IS or TIA
* **Intervention:** Extended ECG for 48h and 2 long-term continuous ambulatory ECG for 14 days each
* **Primary Endpoint:** Composite of stroke, death and intracerebral bleeding (at least 36 months of follow-up)
* **NCT number:** NCT05134454
* **Related section:** AF screening
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

**FIND-AF 2**

* **Population:** 5200 patients with IS
* **Intervention:** 2 groups (minimum follow-up in each patient is 24 months, but may be followed for up to 60 months):
 a) group with high risk for AF: ICM
 b) group with low risk for AF: 7-day Holter ECG at baseline, after 3 and 12 months. Then, once a year until the end of the study or when AF is detected
* **Primary Endpoint:** time until recurrent IS or systemic embolism and time until the first haemorrhagic stroke
* **NCT number:** NCT04371055
* **Related section:** AF screening
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

BIOMARKERS

**EPAF-7**

* **Population: 200 patients ESUS or TIA**
* **Intervention: Atrial electromechanical conduction time (sPA-TDI) and LaHAsPa-Score in people who is dx of AF with 7-day ambulatory ECG monitor + incidental detection of AF within 2 years**
* **Primary Endpoint: Atrial fibrillation**
* **NCT number: NCT05044208**
* **Related section: Biomarkers for guiding AF screening**
* **Current study stage: Ongoing (recruiting)**
* **Study type: Observational (prospective cohort)**

STROKE PREVENTION

**Multimodal Prognostic Assessment of AIS With AF**

* **Population:** 1000 patients with IS
* **Intervention:** ECG monitoring for 7 days + echocardiography measuring LA volume, etc.
* **Primary Endpoint:** Stroke including ischemic or hemorrhagic stroke for 1 year
* **NCT number:** NCT06548269
* **Related section:** Stroke prevention
* **Current study stage:** Active (not recruiting)
* **Study type:** Observational (prospective cohort)

TIMING OF ANTICOAGULATION

OPTIMAS

* **Population:** 3648 patients with IS
* **Intervention:** Early initiation of DOAC vs Standard initiation of DOAC
* **Primary Endpoint:** Recurrent ischemic stroke, ICH and systemic embolism at 90 days from randomization
* **NCT number:** NCT03759938
* **Related section:** Timing of initiation of anticoagulation
* **Current study stage:** Active (not recruiting)
* **Study type:** Randomized trial

START

* **Population:** 200 patients with new disabling neurological deficit attributable to stroke
* **Intervention:** Experimental: 132 hours (Day 6) - The time after symptom onset to initiate treatment will be randomized to one of 4 possible treatment arms: 72 (+/- 24) hours, 132 (+/- 12) hours, 228 (+/- 12) hours, and 324 (+/- 12) hours.
* **Primary Endpoint:** Recurrent ischemic event and hemorrhagic event
* **NCT number:** NCT03021928
* **Related section:** Timing of initiation of anticoagulation
* **Current study stage:** Active (not recruiting)
* **Study type:** Randomized trial

ASAP

* **Population:** 2351 patients with acute ischemic stroke onset <48h
* **Intervention:** Early initiation of anticoagulation (rivaroxaban, dabigatran, apixaban, and edoxaban)
* **Primary Endpoint:** Early neurological deterioration before discharge (average of 7 days)
* **NCT number:** NCT06057467
* **Related section:** Timing of initiation of anticoagulation
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

LEFT ATRIAL APPENDAGE CLOSURE

Occlusion-AF

* **Population:** 750 patients with IS/TIA
* **Intervention:** Left atrial appendage occlusion with the Amulet or Watchman device
* **Primary Endpoint:** Ischemic and hemorrhagic, systemic embolism, major bleeding, and all-cause mortality
* **NCT number:** NCT03642509
* **Related section:** Left atrial appendage closure
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

ELAPSE

* **Population:** 482 patients with ischemic stroke
* **Intervention:** Left atrial appendage Occlusion and therapy with direct oral anticoagulants
* **Primary Endpoint:** Recurrent ischemic stroke, systemic embolism, or cardiovascular death
* **NCT number:** NCT05976685
* **Related section:** Left atrial appendage closure
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

STROKE PREVENTION IN PATIENTS WITH PRIOR ICH

ASPIRE

* **Population:** 700 patients with recent ICH and non-valvular atrial fibrillation
* **Intervention:** Apixaban
* **Primary Endpoint:** Stroke or death up to 3 years
* **NCT number:** NCT03907046
* **Related section:** Secondary prevention in AF and previous ICH
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

STATICH

* **Population:** 500 patients with spontaneous, primary ICH ≥1 day, but not more than 180 days after onset of qualifying ICH
* **Intervention:** Anticoagulant or antiplatelet drugs
* **Primary Endpoint:** Fatal or non-fatal symptomatic ICH within 2 years
* **NCT number:** NCT03186729
* **Related section:** Secondary prevention in AF and previous ICH
* **Current study stage:** Ongoing (recruiting)
* **Study type:** Randomized trial

**References**

1. Haeusler KG, Kirchhof P, Kunze C, Tütüncü S, Fiessler C, Malsch C, Olma MC, Jawad-Ul-Qamar M, Krämer M, Wachter R, et al. Systematic monitoring for detection of atrial fibrillation in patients with acute ischaemic stroke (MonDAFIS): a randomised, open-label, multicentre study. *Lancet Neurol*. 2021;20:426-436

2. Wachter R, Gröschel K, Gelbrich G, Hamann GF, Kermer P, Liman J, Seegers J, Wasser K, Schulte A, Jürries F, et al. Holter-electrocardiogram-monitoring in patients with acute ischaemic stroke (Find-AF(RANDOMISED)): an open-label randomised controlled trial. *Lancet Neurol*. 2017;16:282-290

3. Gladstone DJ, Spring M, Dorian P, Panzov V, Thorpe KE, Hall J, Vaid H, O'Donnell M, Laupacis A, Cote R, et al. Atrial fibrillation in patients with cryptogenic stroke. *N Engl J Med*. 2014;370:2467-2477

4. Sanna T, Diener HC, Passman RS, Di Lazzaro V, Bernstein RA, Morillo CA, Rymer MM, Thijs V, Rogers T, Beckers F, et al. Cryptogenic stroke and underlying atrial fibrillation. *N Engl J Med*. 2014;370:2478-2486

5. Buck BH, Hill MD, Quinn FR, Butcher KS, Menon BK, Gulamhusein S, Siddiqui M, Coutts SB, Jeerakathil T, Smith EE, et al. Effect of Implantable vs Prolonged External Electrocardiographic Monitoring on Atrial Fibrillation Detection in Patients With Ischemic Stroke: The PER DIEM Randomized Clinical Trial. *Jama*. 2021;325:2160-2168

6. Bernstein RA, Kamel H, Granger CB, Piccini JP, Sethi PP, Katz JM, Vives CA, Ziegler PD, Franco NC, Schwamm LH. Effect of Long-term Continuous Cardiac Monitoring vs Usual Care on Detection of Atrial Fibrillation in Patients With Stroke Attributed to Large- or Small-Vessel Disease: The STROKE-AF Randomized Clinical Trial. *JAMA*. 2021;325:2169-2177

7. Bugnicourt JM, Rogez V, Guillaumont MP, Rogez JC, Canaple S, Godefroy O. Troponin levels help predict new-onset atrial fibrillation in ischaemic stroke patients: a retrospective study. *Eur Neurol*. 2010;63:24-28

8. Beaulieu-Boire I, Leblanc N, Berger L, Boulanger JM. Troponin elevation predicts atrial fibrillation in patients with stroke or transient ischemic attack. *J Stroke Cerebrovasc Dis*. 2013;22:978-983

9. Lasek-Bal A, Gasior Z, Kowalewska-Twardela T, Urbanek T. New-onset atrial fibrillation in patients with elevated troponin I levels in the acute phase of stroke. *Int J Cardiol*. 2015;195:210-211

10. Ward F, McGovern R, Cotter PE. Troponin-I is a predictor of a delayed diagnosis of atrial fibrillation in acute ischemic stroke and transient ischemic attack. *J Stroke Cerebrovasc Dis*. 2015;24:66-72

11. Scheitz JF, Erdur H, Haeusler KG, Audebert HJ, Roser M, Laufs U, Endres M, Nolte CH. Insular cortex lesions, cardiac troponin, and detection of previously unknown atrial fibrillation in acute ischemic stroke: insights from the troponin elevation in acute ischemic stroke study. *Stroke*. 2015;46:1196-1201

12. Naess H, Andreassen UW, Thomassen L, Kvistad CE. A score for paroxysmal atrial fibrillation in acute ischemic stroke. *Int J Stroke*. 2018;13:496-502

13. Tancin Lambert A, Ratajczak-Tretel B, Al-Ani R, Arntzen K, Bakkejord GK, Bekkeseth HMO, Bjerkeli V, Eldøen G, Gulsvik AK, Halvorsen B, et al. Biomarkers predictive of atrial fibrillation in patients with cryptogenic stroke. Insights from the Nordic Atrial Fibrillation and Stroke (NOR-FIB) study. *Eur J Neurol*. 2023;30:1352-1363

14. Diener HC, Becher N, Sehner S, Toennis T, Bertaglia E, Blomström Lundqvist C, Brandes A, Beuger V, Calvert M, Camm AJ, et al. Anticoagulation in patients with device-detected atrial fibrillation with and without a prior stroke or transient ischemic attack. The NOAH-AFNET 6 trial. *Journal of the American Heart Association*. 2024;13:e036429

15. Shoamanesh A, Field T, Coutts S, Sharma M, Gladstone D, Mian R, Granger CB, Connolly S, Lopes R, Healey J. Apixaban for stroke prevention in patients with subclinical atrial Fibrillation and prior stroke: insights from the ARTESIA trial. *Eur Stroke J*. 2024;9

16. Seiffge DJ, Traenka C, Polymeris A, Hert L, Peters N, Lyrer P, Engelter ST, Bonati LH, De Marchis GM. Early start of DOAC after ischemic stroke: Risk of intracranial hemorrhage and recurrent events. *Neurology*. 2016;87:1856-1862

17. Yaghi S, Trivedi T, Henninger N, Giles J, Liu A, Nagy M, Kaushal A, Azher I, Mac Grory B, Fakhri H, et al. Anticoagulation Timing in Cardioembolic Stroke and Recurrent Event Risk. *Ann Neurol*. 2020;88:807-816

18. De Marchis GM, Seiffge DJ, Schaedelin S, Wilson D, Caso V, Acciarresi M, Tsivgoulis G, Koga M, Yoshimura S, Toyoda K, et al. Early versus late start of direct oral anticoagulants after acute ischaemic stroke linked to atrial fibrillation: an observational study and individual patient data pooled analysis. *J Neurol Neurosurg Psychiatry*. 2022;93:119-125

19. Kimura S, Toyoda K, Yoshimura S, Minematsu K, Yasaka M, Paciaroni M, Werring DJ, Yamagami H, Nagao T, Yoshimura S, et al. Practical "1-2-3-4-Day" Rule for Starting Direct Oral Anticoagulants After Ischemic Stroke With Atrial Fibrillation: Combined Hospital-Based Cohort Study. *Stroke*. 2022;53:1540-1549

20. Grosse GM, Hüsing A, Stang A, Kuklik N, Brinkmann M, Nabavi D, Sparenberg P, Weissenborn K, Gröschel K, Royl G, et al. Early or late initiation of dabigatran versus vitamin-K-antagonists in acute ischemic stroke or TIA: The PRODAST study. *Int J Stroke*. 2023;18:1169-1177

21. Sharobeam A, Lin L, Lam C, Garcia-Esperon C, Gawarikar Y, Patel R, Lee-Archer M, Wong A, Roizman M, Gilligan A, et al. Early anticoagulation in patients with stroke and atrial fibrillation is associated with fewer ischaemic lesions at 1 month: the ATTUNE study. *Stroke Vasc Neurol*. 2024;9:30-37