# STEPCARE sub-study proposal

### Title (short, 200 characters max.):

### Early vs. Delayed Coronary Angiography and PCI After Cardiac Arrest

### Main hypothesEs tested (2 max)

Randomized trials showed that patients with OHCA without ST elevations after stable ROSC did not benefit from emergent coronary angiography (CAG) compared to delayed strategy.

COACT trial (2019): No difference in 90-day survival between immediate vs. delayed angiography after neuroprognostication (OR 0.89; 95% CI 0.62–1.27).

TOMAHAWK trial (2021): No benefit of early angiography; a trend toward worse 30-day survival (HR 1.28; p=0.06).

Neurological outcomes were also unaffected in both trials.

ESC 2023 Guidelines do not recommend routine early angiography in hemodynamically stable post-OHCA patients without STEMI (Class III, Level A).

So far, the evidence for the effect of percutaneous coronary intervention (PCI) in the OHCA population is mainly derived from observational studies. The value of performing emergent PCI for clinically important stenoses of coronary arteries in OHCA population (especially in patients without ST elevations) is controversial. This subanalysis aim to study:

In patients with cardiac arrest due to ACS, early coronary angiography (≤120 minutes from ROSC) is associated with improved 180-day survival compared to delayed or no angiography.

### Single Center [ ] , Multicenter [X]

All STEPCARE participating centers

### PICO

Patients: all patients identified with ACS (both STEMI and NSTEMI) as the main cause of cardiac arrest

Intervention/Exposure/Prognostic factor: Emergent CAG (<120 min) after stable ROSC

Comparison: Delayed or No CAG

Outcome: primary outcome: 180-days mortality, secondary outcomes: neurological outcome (mRS) at 180-days, safety end points: major bleeding, stroke, renal replacement therapy during hospitalization

### Data needed for the analysis (Specify variables and motivate any proposed additions to the eCRF)

Baseline characteristics – all available

Acute coronary syndrome data – STEMI/NSTEMI, shock on admission

Coronary angiography findings – time to CAG, 1/2/3 vessel disease, culprit lesion, PCI yes/no

### Logistics – How will additional data be gathered?

There are no additional data needed, all data are part of the STEPCARE database

### Brief statistical analysis plan and sample size estimate

Descriptive statistics for baseline characteristics (mean ± SD or median [IQR]; percentages).

Unadjusted comparison of outcomes between early vs. delayed/no CAG using Chi-square and Mann-Whitney U test.

Multivariable logistic regression for 180-day mortality and neurological outcome, adjusting for key covariates.

Propensity score analysis (matching or IPTW) to account for treatment selection bias (early vs. delayed/no CAG).

Sensitivity analyses excluding STEMI and including only patients with confirmed CAD.

Subgroup analyses: PCI performed vs. no PCI, Shockable rhythm vs. non-shockable rhythm, STEMI versus NSTEMI, shock versus no-shock, culprit versus no-culprit lesions.

### Funding (IF applicbable)

NA

### Corresponding authors Name, Institution & e-mail address:

Daniel Rob, General University Hospital in Prague, daniel.rob@vfn.cz

### Co-workers:

Jan Belohlavek, General University Hospital in Prague, jan.belohlavek@vfn.cz

Ondrej Smid, General University Hospital in Prague, ondrej.smid@vfn.cz