Atherosclerosis and Plaque Vulnerability: Minimum, Preferred, and Optional Dataset Recommendations.

Dataset	Minimal	Preferred	Optional
Demographics	• Age • Sex • Ethnicity		
Index event and stroke severity	• Index event type (Ischaemic stroke, TIA, or ICH) • Interval from stroke onset • NIHSS (total score) at presentation • IVT • EVT • Earlier event in the same territory (within 6 months of the presenting event) and approximate interval since earlier event. • TOAST Criteria[1]	• ESUS[12]	
Pre-morbid functional and cognitive status	• Pre-stroke mRS	• Dementia prior to stroke	
Medical History	• Hypertension • Diabetes mellitus • Prior history of coronary artery disease • Heart Failure • Smoking status • AF on ECG on admission • Documented clinical history of AF known **prior** to stroke • New diagnosis of AF since stroke (AFDAS)[2] • Hyperlipidaemia • Height & weight (to calculate BMI) • Prior history of peripheral arterial disease (including prior carotid revascularisation) • Previous ischaemic stroke • Previous TIA • Previous ICH • Alcohol consumption (grammes/week) • Active solid organ malignancy	• Obstructive sleep apnoea • AF subtype (paroxysmal, sustained, or permanent)[20]	• Documented angiographic evidence of coronary artery disease without prior myocardial infarction or revascularisation • Frailty status (e.g. Clinical Frailty Scale)[7] • Charlson Co-morbidity Index[6] • Systolic BP • Diastolic BP
Medication Use (pre-event & discharge)	• Antiplatelets • Anticoagulants • Statin • Anti-hypertensive medication use • Other lipid-lowering therapy		• ACE inhibitor or ARB at discharge • Calcium channel blocker • Thiazide diuretics • Anti-arrhythmics at discharge

Baseline Neuroimaging	• MRI Performed • Imaging modality used to quantify neuroimaging data • Acute infarct on imaging • Acute infarct territorial pattern (e.g. none, anterior circulation, posterior circulation; multiple territories) • Laterality of acute infarct (e.g. left, right, bilateral) • Presence of chronic non-lacunar infarct[12] • Presence of chronic lacunar infarct[12]	• Number of acute infarcts (e.g. single, multiple) • Location of Acute infarcts (e.g. cortical, subcortical, watershed etc) • Burden of chronic lacunar infarcts (e.g. single, or multiple) • CAA diagnostic criteria met using Boston[13] or Edinburgh[14] Criteria (+/- individual components e.g. CMBs, siderosis) • White matter hyperintensities (Fazekas scale)[9]	• Acute infarct maximal diameter (of largest infarct) • Acute infarct volume • Evidence of acute insular infarction • Chronic non-lacunar infarction burden (e.g. single, or multiple) • Distribution of chronic non-lacunar infarcts (e.g. distribution of a single or multiple vascular territories) • Presence of chronic non-lacunar infarct in distribution of the suspected culprit plaque. • Core infarct volume (on perfusion imaging)[5] • Penumbra volume • Mismatch volume • Mismatch ratio • Imaging software was used for CTP
Aortic Arch Imaging	• Imaging modality used to image aortic arch	• Aortic arch plaque grade[21]	• Aortic arch calcification (pattern and severity)
Extra-cranial carotid and vertebral Imaging†	• Imaging modality used to image the extra-cranial ICA • Maximal wall thickness of the extra-cranial ICA plaque • Luminal stenosis of the extra-cranial ICA plaque • Extra-cranial vertebral artery (V1-V3 segments) luminal stenosis (%)	• Presence of suspected culprit plaque in the extra-cranial circulation (other than ICA) & degree of stenosis (e.g. subclavian, brachiocephalic, common carotid artery) • Plaque-RADS score (and individual components intra-plaque haemorrhage, ulceration etc)[22]	• Extra-cranial vertebral artery (V1-V3 segments) maximal wall thickness (MWT)
Intra-cranial Vascular Imaging†	• Imaging modality to evaluate intra-cranial circulation • Presence of a suspected culprit plaque (irrespective of stenosis severity) in the intra-cranial circulation. • Location of suspected culprit intra-cranial plaque • Degree of stenosis of suspected culprit plaque		• Evidence of intra-cranial culprit plaque enhancement after gadolinium (if performed)
Baseline laboratory investigations	• eGFR • CRP or hsCRP • HbA1c • Total cholesterol • LDL • HDL • Triglycerides • Interval from stroke to sample measurement	• IL-6 • Lp(a) • Haemoglobin • Troponin T or troponin I • NTproBNP	
Cardiac evaluation	• Echocardiographic imaging performed (& imaging modality)	• LA thrombus identified • LA Diameter • LA Volume (mls) • LA Volume Index (mls/m^2) • LV hypertrophy • LV ejection fraction • LV thrombus • PFO presence and Shunt size	

		• Inter-atrial septal aneurysm • LV Apical akinesis	
Risk Factor Control and Medication Use During Follow-Up	• Anti-platelets • Statins • Any other lipid-lowering therapies • Anti-hypertensives • Oral anticoagulants (specify) • Glucose-lowering medications	• LDL • HbA1c • CRP (or hsCRP)	• Clinic Blood Pressure reading • 24hr average BP reading
Vascular Imaging During Follow-Up†		• Repeat imaging of extra-cranial arteries performed • Imaging modality used on repeat imaging of extra-cranial arteries. • ICA luminal stenosis measurement • Repeat imaging of the intra-cranial arteries performed. • Imaging modality used for repeat imaging of intra-cranial arteries • Degree of stenosis of suspected culprit plaque on follow-up intra-cranial vascular imaging	
Cardiac Rhythm Monitoring During Follow-Up	• Cardiac rhythm performed post-discharge • New AF detected since admission ECG (AFDAS)	• Cardiac monitoring modality used • Total duration of cardiac monitoring from index stroke • AFDAS subtype (paroxysmal or non-paroxysmal)	• The longest single duration of AF detected on cardiac monitoring • AFDAS burden (total duration of AF divided by the total duration of monitoring)[23]
Outcomes*	• Recurrent ischaemic stroke • Recurrent stroke within the territory of the culprit plaque that caused the index stroke • TIA • ICH • Myocardial infarction[24] • MACE‡ • Cardiovascular death[25] • All-cause death • Non-fatal (resuscitated) cardiac arrest • Sudden cardiac death[25] • Functional Outcome (mRS) at 90 days • Carotid revascularisation since index stroke • Carotid revascularisation procedure type (and side)	• Disabling recurrent stroke • TOAST subtype of recurrent ischaemic stroke. • Cause of death (if not due to cardiovascular cause) • PCI or CABG during follow-up. • EQ-5D-5L[19] (patient reported quality of life questionnaire) • Peripheral vascular intervention (specify) • Hospitalisation for unstable angina[25]	• Hospitalisation for decompensated HF[25] • Dementia
The interval from index event to biomarker measurement is considered a minimum dataset item.† Information regarding the imaging modality used should always be collected. * For each outcome, the time interval between index event and outcome should be reported. ‡ It is recommended that MACE should always at a minimum include the individual components of			

recurrent non-fatal stroke (ischaemic or ICH), non-fatal myocardial infarction, and cardiovascular death. ACE, angiotensin converting enzyme; AF, atrial fibrillation; AFDAS, Atrial fibrillation detected after stroke; ARB, angiotensin-II receptor blocker; BMI, body mass index; BNP, brain natriuretic peptide; BP, blood pressure; CAA, cerebral amyloid angiopathy; CABG, coronary artery bypass graft; CMBs, cerebral microbleeds; CRP, C-reactive protein; CT, computerised tomography; CTP, computerised tomography perfusion imaging; ECG, electrocardiography; ESUS, embolic stroke of undetermined significance; EVT, endovascular thrombectomy; eGFR, estimated glomerular filtration rate; HbA1c, haemoglobin A1c; HDL, high-density lipoprotein; HF, heart failure; ICA, internal carotid artery; ICH, intra-cerebral haemorrhage; IL-6, interleukin-6; LA, left atrium; LDL, low density lipoprotein; LP(a), lipoprotein (a); LV, left ventricle; LVH, left ventricular hypertrophy; MACE, major adverse cardiovascular and cerebrovascular events; MRI, magnetic resonance imaging; mRS, modified Rankin scale; NIHSS, National Institute for Health Stroke Scale; NTproBNP, N-terminal prohormone of brain natriuretic peptide; PCI, percutaneous coronary intervention; TIA, transient ischaemic attack; TOAST, The Trial of Org 10172 in Acute Stroke Treatment.