

# Library Current Awareness Bulletin: Stroke – April 2020

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Articles can be accessed from the links provided. An OpenAthens account may be required to access some of the articles. To create your free account please go to <https://openathens.nice.org.uk/>



## News

### [Eating an egg a day does not raise risk of heart attack or stroke](#)

*NHS Behind the Headlines*

March 2020

[The headline comes from an article by the Mail Online which references a prospective cohort study published in the British Medical Journal on an open-access basis. NHS behind the headlines provides an overview of the published study and commentary on the findings.]

## UpToDate

UpToDate can be accessed via a tile on the Clinical Systems section of AireShare. You can also log in from any PC or device using the OpenAthens option. The following are some of the related topics available:

- [Overview of the Evaluation of Stroke](#)
- [Initial Assessment and Management of Acute Stroke](#)
- [Clinical Diagnosis of Stroke Subtypes](#)
- [Overview of Secondary Prevention of Ischaemic Stroke](#)

## Complications

### [Study on the risk prediction for cerebral infarction after transient ischemic attack: A STROBE compliant study](#)

Zhang, C. et al

*Medicine*, vol. 99 (11) p. e19460

March 2020

[This study aimed to evaluate the value of ABCD<sup>2</sup> score, ABCD<sup>2</sup> score combined with magnetic resonance diffusion weighted imaging (DWI) and intracranial arterial magnetic resonance angiography (MRA) in predicting cerebral infarction after 2 to 30 days of transient ischaemic attack (TIA). 182 patients with TIA were enrolled and their clinical data, test results of DWI and MRA were collected. The incidence of cerebral infarction was observed at 2 days, 7 days and 30 days after TIA. The relationship between ABCD<sup>2</sup> score, performances of DWI and MRA and the early incidence of cerebral infarction after TIA was analysed.]

## Diagnosis

### [Aortic dissection masquerading as a code stroke: A single-centre cohort study](#)

Guglielmi, V. et al

*European Stroke Journal*, vol. 5(1) pp. 56-62

March 2020

[The authors report estimated incidence, clinical manifestations, treatment and outcomes of patients with an acute aortic dissection who presented to the emergency department at a comprehensive stroke centre, between 2015 and 2018, with neurological deficits suggestive of an acute stroke ('code stroke') (n=2,874). All patients routinely underwent non-contrast computed tomography of the brain and computed tomography-angiography of the aortic arch, cervical and intracranial arteries.]

## Drug Therapy

### [Comparison between thromboelastography and the conventional coagulation test in detecting effects of antiplatelet agents after endovascular treatments in acute ischemic stroke patients: A STROBE-compliant study](#)

Liang, C. et al

*Medicine*, vol. 99(10) p. e19447

March 2020

[This retrospective cohort study was designed to provide initial data to compare thromboelastography (TEG) with the conventional coagulation test (CCT) to analyse the coagulation function of antiplatelet drugs in patients with acute ischaemic stroke after endovascular therapy (n=240). The baseline and clinical characteristics of these patients were collected with respect to TEG and CCT, fibrinogen (FIB), international normalized ratio (INR), and platelet count (PLT) on day 5 after aspirin and clopidogrel post-endovascular interventions. The correlation and agreement of these 2 detecting methods were analysed.]

### [Patient perception of anticoagulant treatment for stroke prevention \(RE-SONANCE study\)](#)

Vinereanu, D. et al

*Open Heart*, vol. 7(1)

March 2020

[The RE-SONANCE observational, prospective, multicentre, international study used the validated Perception on Anticoagulant Treatment Questionnaire (PACT-Q) to assess patients with AF already taking a VKA who were switched to dabigatran (cohort A), and newly diagnosed patients initiated on either dabigatran or a VKA (cohort B). Visit 1 (V1) was at baseline, and visit 2 (V2) and visit 3 (V3) were at 30–45 and 150–210 days after baseline, respectively. Primary outcomes were treatment satisfaction and convenience in cohort A at V2 and V3 versus baseline, and in cohort B for dabigatran and a VKA at V2 and V3. The main analysis set comprised 4,100 patients in cohort A and 5,365 in cohort B (dabigatran: 3,179; VKA: 2,186).]

### [To treat or not to treat: Importance of functional dependence in deciding intravenous thrombolysis of “mild stroke” patients](#)

Merlino, G. et al

*Journal of Clinical Medicine*, vol. 9(3)

March 2020

[The aims of this study were to investigate the effect of Intravenous thrombolysis (IVT) and to explore the role of functional dependence in influencing the response to IVT. This study was a retrospective analysis of a prospectively collected database, including 389 patients stratified into patients receiving IVT (IVT+) and not receiving IVT (IVT -) just because of mild symptoms.]

## Neuroscience & Neuroimaging

### [Brain oscillatory activity as a biomarker of motor recovery in chronic stroke](#)

Ray, A.M. et al

*Human Brain Mapping*, vol. 41(5) pp. 1296-1308

April 2020

[The neurophysiological data of 30 chronic stroke patients with severe upper-limb paralysis are the basis of this observational study which investigated the relationship of oscillatory sensorimotor brain activity to motor recovery. The patients underwent an intervention including movement training based on combined brain–machine interfaces and physiotherapy of several weeks recorded in a double-blinded randomized clinical trial. The alpha oscillations over the motor cortex of 22 of these patients were analysed using multilevel linear predictive modelling.]

### [Implementation of multimodal computed tomography in a telestroke network: Five-year experience](#)

Garcia-Esperon, C. et al

*CNS Neuroscience & Therapeutics*, vol. 26(3) pp. 367-373

March 2020

[The authors hypothesised that multimodal computed tomography (mCT) at the primary centre—including noncontrast CT, CT perfusion, and CT angiography—may enhance reperfusion therapy decision-making. They developed a network with five spoke primary stroke sites and assessed safety, feasibility, and influence of mCT in rural hospitals on decision-making for thrombolysis. A total of 334 patients were assessed via telemedicine from April 2013 to June 2018. Clinical outcomes were measured, and decision-making compared using theoretical models for reperfusion therapy applied without mCT guidance.]

## Psychological Factors

### [Post-stroke depression and functional impairments – A 3-year prospective study](#)

Schottke, H. et al

*Comprehensive Psychiatry*, vol. 99

March 2020

[The aims of this study were to 1) investigate the relationship between post-stroke depression (PSD), post-stroke functional impairments, and social support of stroke patients in a 3-year prospective design, and 2) address methodological shortcomings of previous studies. PSD was assessed with a structured clinical interview and a dimensional symptom rating scale. N=174.]

## Rehabilitation

### [Computerised speech and language therapy can help people with aphasia find words following a stroke](#)

Cook, R. et al

*BMJ (Clinical Research ed.)* vol. 368

March 2020

[This article is part of the BMJ’s NIHR Signals series. You can [read more about the collaboration here](#). The author evaluates a study by Palmer, Dimairo and Cooper that was published in *Lancet Neurology*. It considers the purpose of the study, the findings, current guidance on the issue and the implications.]

### [Factors influencing the uptake of cardiac rehabilitation by cardiac patients with a comorbidity of stroke](#)

Harrison, A.S. et al

*IJC Heart and Vasculature*, vol. 27

April 2020

[The aim of this observational study was to identify and evaluate factors contributing to the likelihood of a cardiac patient with comorbid stroke attending cardiac rehabilitation (CR) in the UK. The study utilised data collected for the National Audit of Cardiac Rehabilitation which covered 229 programmes. Patients were included if they had an initiating cardiac event, such as myocardial infarction, between 1st January 2013 and 30th Jan 2019. Patient and service-level characteristics were included in the analysis to identify significant associations of patients with comorbid stroke attending CR.]

### [Non-pharmacological interventions for post-stroke fatigue: Systematic review and network meta-analysis](#)

Su, Y. et al

*Journal of Clinical Medicine*, vol. 9(3)

March 2020

[A systematic review and network meta-analysis of RCTs were performed using EMBASE, MEDLINE, CINAHL, Cochrane library, ClinicalTrials.gov, CNKI, and CQVIP, from inception to January 2018, in English and Chinese languages. RCTs involving different non-pharmacological interventions for post-stroke fatigue (PSF) with an outcome of fatigue measured using the Fatigue Severity Scale were included. Multiple intervention comparisons based on a Bayesian network are used to compare the relative effects of all included interventions. Ten RCTs with eight PSF non-pharmacological interventions were identified, comprising 777 participants.]

### [Physical fitness training for stroke patients](#)

Saunders, D.H. et al

*Cochrane Systematic Review*, No. CD003316

March 2020

[The reviewers searched the Cochrane Stroke Trials Register, CENTRAL, MEDLINE, Embase, CINAHL, SPORTDiscus, PsycINFO, and four additional databases. They also searched ongoing trials registers and conference proceedings, screened reference lists, and contacted experts in the field. The selection criteria was randomised trials comparing either cardiorespiratory training or resistance training, or both (mixed training), with usual care, no intervention, or a non-exercise intervention in stroke survivors. 75 studies were included in the review, involving 3,017 mostly ambulatory participants, which comprised cardiorespiratory (32 studies, 1,631 participants), resistance (20 studies, 779 participants), and mixed training interventions (23 studies, 1,207 participants).

### [Self-efficacy to engage in physical exercise and walking ability best predicted exercise adherence after stroke](#)

Caetano, L.C.G. et al

*Stroke Research and Treatment*

March 2020

[The aim of this exploratory study was to describe exercise preferences and investigate the contribution of exercise preferences, walking ability, and current levels of physical activity in predicting exercise adherence in individuals with chronic stroke. Exercise adherence was measured using the first question of the first section of the Exercise Preference Questionnaire (stroke)-Brazil. Nine independent variables were included as potential predictors of exercise adherence: the seven factors of the EPQ (stroke)-Brazil, walking speed, and level of physical activity. N=93.]

### [Simulated driving: The added value of dynamic testing in the assessment of visuo-spatial neglect after stroke](#)

Spreij, L. A. et al

*Journal of Neuropsychology*, vol. 14(1) pp. 28-45

March 2020

[A simulated driving task was used to assess (1) differences in performance (i.e., position on the road and magnitude of sway) between patients with left and right-sided visuo-spatial neglect (VSN), recovered VSN, without VSN, and healthy participants; (2) the relation between average position and VSN severity; and (3) its diagnostic accuracy in relation to traditional tasks. Stroke inpatients were tested with a cancellation task, the Catherine Bergego Scale and

the simulated driving task. In total, 33 patients with left-sided VSN+, 7 patients with right-sided VSN+, 7 patients with left-sided R-VSN, and 53 patients without VSN and 21 healthy control participants were included.]

## **Risk of stroke**

### [Association of magnesium intake with type 2 diabetes and total stroke: an updated systematic review and meta-analysis](#)

Binghao, Z. et al

*BMJ Open*, vol. 10(3)

March 2020

[The reviewers performed a meta-analysis to (1) establish a comprehensive estimate and update the epidemiological evidence for clinical practice; (2) discuss the results of stroke subtype and the impact of several statistical and epidemiology confounders on the investigated association; and (3) highlight the details of the dose–response pattern observed among the participants analysed in the studies. PubMed, Embase, Cochrane Library, Web of Science and ClinicalTrials.gov were systematically reviewed through inception to 15 March 2019, for studies on magnesium intake and T2D or stroke, without language restrictions. The reviewers also manually searched the reference lists of the retrieved literature, bibliographies and grey literature for further eligible articles. A total of 41 prospective cohort studies comprising 53 cohorts, 1,912,634 participants and 76,678 cases were included.]

### [Ischaemic stroke in young adults: a global perspective](#)

Boot, E. et al

*Journal of Neurology, Neurosurgery, and Psychiatry*, vol. 91(4) pp. 411-417

April 2020

[This narrative review provides an overview of the global variation in the epidemiology of stroke in young adults, with special attention to differences in geography, ethnicity/race and sex, as well as traditional and novel risk factors for early-onset ischaemic stroke, such as air pollution. The authors consider the understanding of global differences an important prerequisite for better region-specific prevention and treatment.]

### [The correlation between recurrent risk and CYP2C19 gene polymorphisms in patients with ischemic stroke treated with clopidogrel for prevention](#)

Liu, G. et al

*Medicine*, vol. 99(11) p. e19143

March 2020

[This study aimed to explore the correlation between recurrent risk and CYP2C19 gene polymorphisms in patients with ischaemic stroke (IS) treated with clopidogrel for prevention. 289 patients with IS treated with clopidogrel regularly were enrolled and stroke recurrence of all patients were recorded by follow-up. The correlation between CYP2C19 gene polymorphism and stroke recurrence in patients taking clopidogrel regularly was analysed.]

## **Service Design, Technology & Quality Improvement**

### [What helps and hinders the provision of healthcare that minimises treatment burden and maximises patient capacity? A qualitative study of stroke health professional perspectives](#)

Kyle, J. et al

*BMJ Open*, vol. 10(3)

March 2020

[The authors aimed to examine the potential barriers and enablers to minimising treatment burden and maximising patient capacity faced by health professionals and managers providing care to those affected by stroke. The setting was primary and secondary care stroke services in a single health board area in Scotland. There were 21 participants including stroke consultants, nurses, physiotherapists, occupational therapists, speech and language therapists, psychologists, general practitioners and health-service managers. Face-to-face qualitative interviews were conducted with the participants and data were analysed using thematic analysis to ascertain any factors that influence the provision of low-burden healthcare.]

## Surgery

### [Axillary artery cannulation reduces early embolic stroke and mortality after open arch repair with circulatory arrest](#)

Kim, J-H. Et al

*The Journal of Thoracic and Cardiovascular Surgery*, vol. 159(3) p. 772-778

March 2020

[To evaluate the efficacy of axillary artery cannulation for early embolic stroke and operative mortality, the authors retrospectively compared the outcomes between patients with or without axillary artery cannulation during open aortic arch repair with circulatory arrest. Between January 2004 and December 2017, 468 patients underwent open aortic arch repair with circulatory arrest using antegrade cerebral perfusion and were divided into 2 groups according to the site of arterial cannulation: the axillary artery (axillary group, n=352) or another site (nonaxillary group, n=116) groups. Embolic stroke was defined as a physician-diagnosed new post-operative neurologic deficit lasting more than 72 hours, generally confirmed by computed tomography or magnetic resonance imaging.]

### [Inter-and intrasite variability of mortality and stroke for sites performing both surgical and transcatheter aortic valve replacement for aortic valve stenosis in intermediate-risk patients](#)

Greason, K.L. et al

*The Journal of Thoracic and Cardiovascular Surgery*, vol. 159(4) p. 1233

April 2020

[The authors studied variability in mortality and stroke after patients were randomized to surgical (SAVR) or transcatheter aortic valve replacement (TAVR) in the Placement of Aortic Transcatheter Valves-2A (PARTNER-2A) randomized trial. Patients at intermediate risk for SAVR were randomized to SAVR (n=1,017) or TAVR (n=1,011) with a SAPIEN XT device (Edwards Lifesciences, Irvine, Calif) at 54 sites. Patients were followed to 2 years. A mixed-effect model quantified variability at inter-site and intra-site levels.]

### [Stroke after transcatheter edge-to-edge mitral valve repair: a systematic review and meta-analysis](#)

Barros da Silva, P. et al

*EuroIntervention*, vol. 15(16) pp. 1401-1408

March 2020

[The aim of this study was to assess the stroke rate after transcatheter mitral valve repair (TMVR) with the MitraClip, comparing it with surgical mitral valve repair (SMVR) and optimal medical treatment (OMT). The reviewers systematically searched PubMed, Embase and Cochrane Controlled Register of Trials for studies comparing TMVR with SMVR and/or OMT for the treatment of severe mitral regurgitation. Random-effects and cumulative meta-analysis was performed. Ten studies were included (seven of TMVR versus SMVR and three of TMVR versus OMT), providing a total of 1,881 patients and 61 pooled strokes (16 in TMVR versus SMVR and 45 in TMVR versus OMT).]

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