Library Current Awareness Bulletin: Stroke – June 2020

This is a current awareness bulletin from the Library & Knowledge Services team at Airedale NHS Foundation Trust. If you have any comments or queries, please do not hesitate to contact us. Our contact details can be found on the final page of this bulletin.

Please note: This bulletin contains a selection of material and is not intended to be comprehensive. Professional judgment should be exercised when appraising the material. The Library & Knowledge Services team takes no responsibility for the accuracy of the information supplied.

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

[NHS turns to artificial intelligence to speed up stroke care](#)
National Health Executive
May 2020
[This article mentions that AI solutions are being rolled out across the NHS to support clinical decision making for treatments including mechanical thrombectomy. The article also reminds patients to use the F.A.S.T. (Face, Arms, Speech, Time) acronym to help identify the most common signs of stroke.]

[Stroke Association launches digital guide for people with aphasia](#)
National Health Executive
June 2020
[The Stroke Association has launched the 'Getting Online for People with Aphasia' guide. This article provides details on the guide and a link to access it.]

Complications

[Cerebrovascular disease is associated with an increased disease severity in patients with Coronavirus Disease 2019 (COVID-19): A pooled analysis of published literature](link)
Aggarwal, G. et al
International Journal of Stroke, vol. 15(4) pp. 385-389
June 2020
[Studies were pooled from published literature to assess the association of a history of stroke with outcomes in patients with COVID-19. A pooled analysis of 4 studies showed a 2.5-fold increase in odds of severe COVID-19. While a trend was observed, there was no statistically significant association of stroke with mortality in patients with COVID-19 infection.]

[Circular RNA FUNDC1 improves prediction of stroke associated infection in acute ischemic stroke patients with high risk](link)
Zuo, L.L. et al
Bioscience Reports, vol. 40(6)
June 2020
[This study aimed to find out whether circFUNDC1, which has been reported to be the diagnosis and prognosis biomarker of acute ischaemic stroke, could be the potential predictor of stroke associated infection that could help to guide preventive treatment. In total, 68 patients were included in the study, 26 of which had infection and 42 without.]

Diagnosis and Assessment

[A systematic review and external validation of stroke prediction models demonstrates poor performance in dialysis patients](link)
De Jong, Y. et al
Journal of Clinical Epidemiology, vol. 123 pp. 69-79
July 2020
[The objective of this study was to systematically review and externally assess the predictive performance of models for ischemic stroke in incident dialysis patients. Two reviewers systematically searched and selected ischaemic stroke models. Risk of bias was assessed with the PROBAST. Predictive performance was evaluated within The Netherlands Cooperative Study on the Adequacy of Dialysis (NECOSAD), a large prospective multicentre cohort of incident dialysis patients. Seventy-seven prediction models for stroke were identified, of which 15 were validated. Risk of bias was high, with all of these models scoring high risk in one or more domains.]

[Protected code stroke: hyperacute stroke management during the coronavirus disease 2019 (COVID-19) pandemic](link)
Khosravani, H.
Stroke, vol. 51(6) pp. 1891-1895
June 2020
[The authors outline key aspects to consider when developing a local protected code stroke (PCS) algorithm during the COVID-19 pandemic.]

Drug Therapy

[Anti-inflammatory therapy for preventing stroke and other vascular events after ischaemic stroke or transient ischaemic attack](link)
Coveney, S. et al
Cochrane Systematic Review – Intervention
May 2020
[The aim of this systematic review was to assess the benefits and harms of anti-inflammatory medications plus standard care versus standard care with or without placebo for prevention of vascular events (stroke, myocardial infarction (MI), non-fatal cardiac arrest, unstable angina requiring revascularisation, vascular death) and all-cause mortality in people with a prior history of ischaemic stroke or transient ischaemic attack (TIA). No studies met the

inclusion criteria, indicating that there is currently a paucity of evidence on the use of anti-inflammatory medications for prevention of major cardiovascular events following ischaemic stroke or TIA. RCTs are needed to assess whether use of anti-inflammatory medications in this setting is beneficial.]

Fluoxetine to improve functional outcomes in patients after acute stroke: the FOCUS RCT
Dennis, M. et al
Health Technology Assessment, vol. 24(22)
May 2020
[The Fluoxetine Or Control Under Supervision (FOCUS) trial tested the hypothesis that fluoxetine improves recovery after stroke. The FOCUS trial was a pragmatic, multicentre, parallel-group, individually randomised, placebo-controlled trial that took place in 103 UK hospitals. Patients were eligible if they were aged ≥ 18 years, had a clinical stroke diagnosis, with focal neurological deficits, between 2 and 15 days after onset. Patients were randomly allocated 20 mg of fluoxetine once per day or the matching placebo for 6 months via a web-based system using a minimisation algorithm. The primary outcome was the modified Rankin Scale at 6 months. Patients, carers, health-care staff and the trial team were masked to treatment allocation. Outcome was assessed at 6 and 12 months after randomisation. Patients were analysed by their treatment allocation as specified in a published statistical analysis plan.]

Neuroscience & Neuroimaging

A prototype microwave system for 3D brain stroke imaging
Tobon Vasquez, J.A. et al
Sensors, vol. 20(9)
May 2020
[The described device is based on a low-complexity architecture which makes use of a minimum number of properly positioned and designed antennas placed on a helmet. It exploits a differential imaging approach and provides 3D images of the stroke. Preliminary experiments involving a 3D phantom filled with brain tissue-mimicking liquid confirm the potential of the technology in imaging a spherical target mimicking a stroke of a radius equal to 1.25 cm]

COVID-19 related neuroimaging findings: a signal of thromboembolic complications and a strong prognostic marker of poor patient outcome
Jain, R. et al
Journal of the Neurological Sciences, vol. 414
July 2020
[The objective of this study was to investigate the incidence and spectrum of neuroimaging findings and their prognostic role in hospitalised COVID-19 patients in New York City. This is a retrospective cohort study of 3,218 COVID-19 confirmed patients admitted to a major healthcare system (three hospitals) in New York City between March 1, 2020 and April 13, 2020. Clinical data were extracted from electronic medical records, and particularly data of all neurological symptoms were extracted from the imaging reports. Four neuroradiologists evaluated all neuroimaging studies for acute neuroimaging findings related to COVID-19.]

Mechanical Thrombectomy in the era of the COVID-19 pandemic: emergency preparedness for neuroscience teams: a guidance statement from the Society of Vascular and interventional Neurology
Nguyen, T.N. et al
Stroke, vol. 51 (6) pp. 1896-1901
June 2020
[The authors present a modified algorithm to acute ischemic large vessel occlusion stroke workflow in the era of the COVID-19 pandemic. This guidance statement is based on shared best practices, consensus among academic and non-academic practicing vascular and interventional neurologists, literature review, and would be adapted to the available resources of a local institution.]

Psychological Factors

[Impairments in emotion recognition and risk-taking behaviour after isolated, cerebellar stroke](#)
Van den Berg, N.S. et al
The Cerebellum, vol. 19(3) pp. 419-425
June 2020
[This study aimed to investigate facial emotion recognition and risky decision-making in patients who had suffered a cerebellar stroke as well as to investigate a relationship between these constructs. Thirteen patients with a discrete, isolated, cerebellar lesion as a consequence of a stroke were included in the study. Emotion recognition was assessed with the Facial Expressions of Emotions—Stimuli and Test (FEEST). Risk-taking behaviour was assessed with the Action Selection Test (AST). Furthermore, 106 matched healthy controls performed the FEEST and 20 matched healthy controls performed the AST.]

[Pharmacological, psychological and non-invasive brain stimulation interventions for preventing depression after stroke](#)
Allida, S. et al
Cochrane Systematic Review – Intervention
May 2020
[The primary objective of this systematic review was to test the hypothesis that pharmacological, psychological therapy, non-invasive brain stimulation, or combinations of these interventions reduce the incidence of diagnosable depression after stroke. Secondary objectives were to test the hypothesis that pharmacological, psychological therapy, non-invasive brain stimulation or combinations of these interventions reduce levels of depressive symptoms and dependency, and improve physical functioning after stroke. Another aim was to determine the safety of, and adherence to, the interventions. 19 RCTs (21 interventions), with 1,771 participants were included in the review. Data were available for 12 pharmacological trials (14 interventions) and seven psychological trials.]

Rehabilitation

[An extended stroke rehabilitation service for people who have had a stroke: the EXTRAS RCT](#)
Shaw, L. et al
Health Technology Assessment, vol. 24(24) p. 1-202
May 2020
[The aim of this study was to determine the clinical effectiveness and cost-effectiveness of an extended stroke rehabilitation service (EXTRAS). It was a pragmatic, observer-blind, parallel-group, multicentre randomised controlled trial with embedded health economic and process evaluations. Participants were randomised (1:1) to receive EXTRAS or usual care. Participants were patients with a new stroke, who received early supported discharge, and their informal carers. The study was conducted in 19 NHS study centres in the UK. All study centres provided an early supported discharge service.]

[Balance and gait after first minor ischemic stroke in people 70 years of age or younger: a prospective observational cohort study](#).
Hamre, C. et al
Physical Therapy, vol. 100(5) pp. 798-806
May 2020
[The objective of this study was to explore balance and gait in the acute phase and after 3 and 12 months in patients ≤70 years with minor ischemic stroke (National Institutes of Health Stroke Scale score ≤3). This study also explored factors predicting impaired balance after 12 months. This study was designed as an explorative longitudinal cohort study. Patients were recruited consecutively from 2 stroke units. Balance and gait were assessed with the Mini-Balance Evaluation Systems Test (Mini-BESTest), Timed Up and Go, and preferred gait speed. Predictors for impaired balance were explored using logistic regression.]

[Experience of enriched rehabilitation in the chronic phase of stroke](#)
Vive, S. et al
Disability and Rehabilitation
June 2020

[This study explored the experiences of patients who participated in an enriched task-specific therapy (ETT) program in the chronic phase after stroke. Focus group interviews were conducted with twenty participants with a mean time since stroke of 30 months and mean age 61 years, who completed the ETT program including task-specific training and environmental enrichment. ETT was delivered 3.5–6 h per day, 51=2 days per week for 3 weeks in a climate suitable for both indoor and outdoor activities. The training consisted of repetitive mass practice of gradually increasing difficulty. Directly after the intervention, qualitative interviews were conducted in six focus groups. The interviews were analysed with qualitative content analysis.]

Fifteen years of wireless sensors for balance assessment in neurological disorders
Zampogna, A. et al
Sensors, vol. 20(11)
June 2020
[This narrative review aims to address the topic of balance and wireless sensors in several neurological disorders, including Alzheimer's disease, Parkinson's disease, multiple sclerosis, stroke, and other neurodegenerative and acute clinical syndromes. The review discusses the physiological and pathophysiological bases of balance in neurological disorders as well as the traditional and innovative instruments currently available for balance assessment. The technical and clinical perspectives of wearable technologies, as well as current challenges in the field of teleneurology, are also examined.]

Interventions for sexual dysfunction following stroke
Stratton, H. et al
Cochrane Systematic Review – Intervention
May 2020
[The objective of this systematic review was to evaluate the effectiveness of interventions to reduce sexual dysfunction following stroke, and to assess adverse events associated with interventions for sexual dysfunction following stroke. The review authors included randomised controlled trials (RCTs) that compared pharmacological treatments, mechanical devices, or complementary medicine interventions versus placebo. We also included other non-pharmacological interventions (such as education or therapy), which were compared against usual care or different forms of intervention (such as different intensities) for treating sexual dysfunction in stroke survivors. Three RCTs with a total of 212 participants were identified. Significant heterogeneity in interventions (one pharmacological, one physiotherapy-based, and one psycho-educational) was identified. All RCTs were small and of 'low' or 'very low' quality. Based on these RCTs, data are insufficient to provide any reliable indication of benefit or risk to guide clinical practice in terms of the use of sertraline, specific pelvic floor muscle training, or individualised sexual rehabilitation.]

Mental practice for treating upper extremity deficits in individuals with hemiparesis after stroke
Barclay, R.E. et al
Cochrane Systematic Review – Intervention
May 2020
[The objective of this systematic review was to determine whether mental practice (MP) improves outcomes of upper extremity rehabilitation for individuals living with the effects of stroke. In particular, the reviewers sought to (1) determine the effects of MP on upper extremity activity, upper extremity impairment, activities of daily living, health-related quality of life, economic costs, and adverse effects; and (2) explore whether effects differed according to (a) the time post stroke at which MP was delivered, (b) the dose of MP provided, or (c) the type of comparison performed. The reviewers included randomized controlled trials (RCTs) of adult participants with stroke who had deficits in upper extremity function (called upper extremity activity). 25 studies involving 676 participants from nine countries were included.]

Recalibrating hope: a longitudinal study of the experiences of people with aphasia after stroke
Bright, F.A.S. et al
Scandinavian Journal of Caring Sciences, vol. 34(2) pp. 428-435
June 2020
[This study aimed to identify how people with aphasia experience hope one year after stroke and how hope may change in the year after stroke. An interpretive description methodology (a qualitative methodology used for small-

scale investigations of clinically relevant phenomena) was used. Interviews were conducted with four people with aphasia who had been interviewed one year previously. These were analysed using content analysis.]

The Xbox/Kinect use in poststroke rehabilitation settings: a systematic review
Xavier-Rocha, T.B. et al
Arquivos de Neuro-Psiquiatria, vol. 78(6)
June 2020
[The objective of this systematic review was to verify the outcomes analysed in randomised controlled trials that investigated the use of Xbox/Kinect in patients with stroke. A total of 93 papers were collected from databases, and eight were selected for analysis. The main outcomes were postural balance and activities of daily living, with four studies addressing these variables. However, only one study showed the effect of Xbox/Kinect intervention on balance as large, as in two other studies evaluating manual dexterity and depression, respectively.]

Risk of stroke

Association between interleukin-10-819T/C polymorphism and risk of ischemic stroke: A meta-analysis
Zuo, S., Zheng, T., and Li, H.
Medicine, vol. 99(20)
May 2020
[A meta-analysis was conducted to investigate the potential association between IL-10-819T/C polymorphism and ischemic stroke risk. Eight case-control studies with 1,832 cases and 1,520 controls were included.]

Longer term stroke risk in intracerebral haemorrhage survivors
Banerjee, G. et al
Journal of Neurology, Neurosurgery, and Psychiatry
June 2020
[The purpose of this study was to evaluate the influence of intracerebral haemorrhage (ICH) location on stroke outcomes. Patients that were recruited to a UK hospital-based, multicentre observational study of adults with imaging confirmed spontaneous ICH were included. The outcomes of interest were occurrence of a cerebral ischaemic event (either stroke or transient ischaemic attack) or a further ICH following study entry. Haematoma location was classified as lobar or non-lobar.]

Socioeconomic status predicts the risk of stroke death: a systematic review and meta-analysis
Wang, S. et al
Preventive Medicine Reports, vol. 19
May 2020
[The purpose of this systematic review and meta-analysis was to evaluate the association between low socioeconomic status and stroke mortality. A systematic review of MEDLINE, EMBASE, and Web of Science for cohort studies that reported low socioeconomic status and stroke mortality was conducted from inception until July 2017. 27 prospective cohort studies (471,354,852 subjects; 429,886 deaths) assessing stroke mortality with low socioeconomic status were identified.]

The case for statin use to reduce perioperative adverse cardiovascular and cerebrovascular events
Ratcliffe, F. and Rothwell, P.M.
British Journal of Anaesthesia, vol. 124(5) p.525-534
May 2020
[The authors present a case for statin use over the perioperative period, to reduce early vascular adverse events based on statins' early pleiotropic actions, using the primary care QRISK tool for screening of ASCVD risk.]

Service Design & Quality Improvement

[Acute stroke management pathway during Coronavirus-19 pandemic](#)
Baracchini, C. et al
Neurological Sciences, vol. 41(5)
May 2020
[This article explains how activating dedicated areas for COVID-19 patients has led to a substantial change of the acute stroke management pathway at an Italian hospital. Due to the pandemic, this new stroke pathway has been fully tested. The authors would like to share their experience and send a clear message to keep a high attention on stroke as an emergency condition, because they have observed a decreased number of patients with minor strokes and TIAs, longer onset-to-door and door-to-treatment times for major strokes, and a reduced number of transfers from spokes.]

[COVID-19 and stroke – A global World Stroke Organization perspective](#)
Markus, H.S. and Brainin, M.
International Journal of Stroke, vol. 15(4) p. 361-364
June 2020
[The World Stroke Organization has been monitoring the impact of the COVID-19 pandemic globally, and has identified an initial marked fall in stroke presentations as well as a widespread impact on stroke services. The pandemic is changing the way care is delivered, and has highlighted the potential of telemedicine in stroke care.]

[Improving stroke care in times of the COVID-19 pandemic through simulation: practice your protocols!](#)
Kurz, M.W. et al
Stroke, vol. 51(7) pp. 2273-2275
May 2020
[The authors describe their experience with simulation training for COVID-19 stroke treatment protocols. One week of simulation training allowed the identification of numerous latent safety threats and the adjustment of institution-specific protocols to mitigate them. It also helped the physicians and nurses to practice relevant tasks and behavioural patterns (e.g. proper donning and doffing PPE, where to dispose potentially contaminated equipment) to minimise their infectious exposure and to adapt to the new situation.]

[Innovative use of artificial intelligence and digital communication in acute stroke pathway in response to COVID-19](#)
Nagaratnam, K. et al
Future Healthcare Journal, vol. 7(2) pp. 169-173
June 2020
[In this case study the authors describe how Royal Berkshire Hospital, working collaboratively with Brainomix, a UK-based artificial intelligence software company, adopted technological innovation and integrated it into the hyperacute stroke pathway. A case is presented to demonstrate how this innovation can support patient care and deliver successful patient outcomes.]

[Paramedic experiences of using an enhanced stroke assessment during a cluster randomised trial: a qualitative thematic analysis](#)
Lally, J. et al
Emergency Medicine Journal
June 2020
[This article reports the findings of a parallel process evaluation which explored intervention paramedics' experience of delivering the enhanced assessment. Interviewees were recruited from 453 trained intervention paramedics across three UK ambulance services hosting the trial: North East, North West and Welsh Ambulance Services. A semi-structured interview guide aimed to (1) explore the stroke-specific assessment and handover procedures which were part of the Paramedic Acute Stroke Treatment Assessment (PASTA) pathway and (2) enable paramedics to share relevant views about expanding their role and any barriers/enablers they encountered. Interviews were audio-recorded, transcribed verbatim and analysed following the principles of the constant comparative method. 26 interviews were conducted (11 North East, 10 North West and 5 Wales).]

Surgery

[Endovascular treatment or general treatment: how should ischemic stroke patients choose to benefit from them the most?: A systematic review and meta-analysis](#)
Yang, W. et al
Medicine, vol. 99(20)
May 2020
[This meta-analysis was conducted to summarise the benefits of endovascular treatment (EVT) for acute ischemic stroke, explore underlying indications of EVT for acute ischemic stroke (AIS) patients and suggest implications for clinical practice and future research. 18 studies comprising 3,831 patients were included and analysed.]

[Repeated mechanical thrombectomy in short-term large vessel occlusion recurrence: multicentre study and systematic review of the literature](#)
Styczen, H. et al
Journal of Neurointerventional Surgery
May 2020
[A retrospective analysis was conducted of consecutive acute stroke patients treated with mechanical thrombectomy (MT) repeatedly within 30 days at 10 tertiary care centres between January 2007 and January 2020. Baseline demographics, etiology of stroke, angiographic outcome and clinical outcome evaluated by the modified Rankin Scale (mRS) at 90 days were noted. Additionally, a systematic review of reports with repeated MT due to large vessel occlusion (LVO) recurrence was performed. In the systematic review, study designs included case series, case–control studies, and both retrospective and prospective observational studies.]

[Why we fail: mechanisms and co-factors of unsuccessful thrombectomy in acute ischemic stroke](#)
Heider, D.M. et al
Neurological Sciences, vol. 41(6) pp. 1547-1555
June 2020
[The authors report their experience with unsuccessful mechanical thrombectomy (MT) and analyse technical reasons plus patient-related parameters for failure. 596 patients with acute ischemic stroke in the anterior circulation and intention to perform MT with an aspiration catheter and/or stent retriever were analysed. Failure was defined as 0, 1, or 2a on the mTICI scale. Patients with failing MT were analysed for interventional progress and compared to patients with successful intervention, whereby parameters included demographics, medical history, stroke presentation, and treatment.]

Airedale NHS Library

↗ www.educationairedale.co.uk/library

✉ Airedale.library@anhst.nhs.uk

☎ 01535 294412

Airedale General Hospital – Location B11