

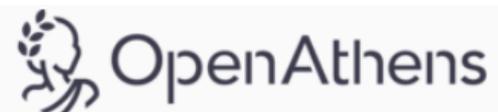
# Library Current Awareness Bulletin: Stroke – November 2019

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Section	Page(s)
<a href="#">Complications</a>	1
<a href="#">Diagnosis</a>	2
<a href="#">Drug Therapy</a>	2
<a href="#">Patient Experience</a>	2-3
<a href="#">Psychological Factors</a>	3
<a href="#">Rehabilitation</a>	3-4
<a href="#">Risk of Stroke</a>	4-5
<a href="#">Service Design, Technology &amp; Quality Improvement</a>	5
<a href="#">Surgery</a>	6

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## Complications

### [Predicting Post-Stroke Pneumonia Using Deep Neural Network Approaches.](#)

Yanqiu, G. et al

International Journal of Medical Informatics, vol. 132

Dec 2019

[Investigated post-stroke pneumonia prediction models using a hospital's electronic health record data for patients with acute ischaemic stroke. Prediction models for pneumonia were built for one and two weeks after stroke onset.]

### [Predictors of Malignant Brain Edema After Mechanical Thrombectomy for Acute Ischemic Stroke.](#)

Xianjun, H. et al

Journal of NeuroInterventional Surgery, vol. 11(10) pp. 994-999

Oct 2019

[Used the 90-day modified Rankin scale score to measure functional outcomes of Malignant Brain Edema (MBE) patients after Mechanical Thrombectomy. 35 of 130 patients developed MBE and they had a lower rate of functional independence and higher mortality than patients without MBE.]

## Diagnosis

### [An interdisciplinary approach to in-hospital stroke improves stroke detection and treatment time.](#)

Manners, J. et al

*Journal of NeuroInterventional Surgery*, vol. 11(11) pp. 1080-1085

Nov 2019

[Analysed in-hospital stroke activations at a stroke centre between 2013 and 2016 to guide revisions of an established protocol. Following implementation, data was collected for comparison with the pre-implementation group. Descriptive statistics for comparison of patient characteristics and time metrics are reported.]

### [Artificial intelligence to diagnose ischemic stroke and identify large vessel occlusions: a systematic review.](#)

Murray, N.M. et al

*Journal of NeuroInterventional Surgery*, Epub ahead of print

Oct 2019

[Identified 20 studies that use machine learning for rapid frontline detection of acute stroke caused by large vessel occlusions (LVOs) and concludes that artificial intelligence may improve LVO stroke detection and rapid triage for expedited treatment.]

## Drug Therapy

### [Caveolin-1 and MLRs: A potential target for neuronal growth and neuroplasticity after ischemic stroke.](#)

Zhong, W. et al

*International Journal of Medical Sciences*, vol. 16(11) pp. 1492-1503

Oct 2019

[Considers the role of Caveolin-1 (Cav-1), the main scaffold protein present in Membrane Lipid Rafts (MLRs), in neuronal growth following ischemic stroke and how Cav-1/MLRs could be exploited as a potential therapeutic target to restore neuroplasticity.]

### [Peroxisome Proliferator-Activated Receptor Gamma Agonists for Preventing Recurrent Stroke and Other Vascular Events in People with Stroke or Transient Ischaemic Attack.](#)

Liu, J. and Wang, L-N.

*The Cochrane Database of Systematic Reviews*, 2019 vol. 10. CD010693

Oct 2019

[Update of a review first published in 2014 (subsequently updated in 2017) to assess the efficacy and safety of proliferator-activated receptor gamma (PPAR- $\gamma$ ) agonists in the secondary prevention of stroke and related vascular events for people with stroke or transient ischaemic attack. Identified 5 RCTs with 5039 participants. The small number and low quality of the studies means that conclusions should be interpreted with caution.]

## Patient Experience

### [Effect of Early Supported Discharge After Stroke on Patient Reported Outcome Based on the Swedish Rikstroke Registry.](#)

Brandal, A. et al

*BMC Neurology*, vol. 19(1)

Dec 2019

[Observational study of 30,232 patients with first-ever stroke registered in the Rikstroke registry in Sweden, between 1/01/2010 and 31/12/2013. Primary outcome: Satisfaction with the rehabilitation at 3 months after discharge. Secondary outcome: Information about stroke provided, tiredness/fatigue, pain, dysthymia/depression, general health status and dependence in activities of daily living (mobility, toileting and dressing) at 3 months after

the stroke. Conclusion: In the setting of modern stroke unit care, early supported discharge appeared to have positive effects on stroke rehabilitation, in the subacute phase.]

[Presenting Time-Based Risks of Stroke and Death for Patients Facing Carotid Stenosis Treatment Options: Patients Prefer Pie Charts Over Icon Arrays.](#)

Scalia, P. et al

*Patient Education & Counseling*, vol. 102(10) pp. 1939-1944

Oct 2019

[Used semi-structured interviews with 27 patients recruited from a vascular clinic to identify preferred formats and metrics for displaying time-dependent risks of stroke or death for three carotid stenosis treatments.]

[Stroke Survivors' Experiences of Team Support Along Their Recovery Continuum.](#)

Hartford, W. et al

*BMC Health Services Research*, vol. 19(1)

Oct 2019

[Conducted individual interviews with 24 participants, comprised of stroke survivors, spousal caregivers, stroke support group coordinators and speech pathologist, to gain insight into healthcare and social structures that can support long-term stroke recovery. Highlighted a lack of teamwork between the different groups and inequities in rehabilitation programs.]

## Psychological Factors

[Psychological Factors and Subjective Cognitive Complaints After Stroke: beyond depression and anxiety.](#)

Van Rijsbergen, M.W.A. et al

*Neuropsychological Rehabilitation*, vol. 29(10) pp.1671-1684

Dec 2019

[Determined the associations of depression, anxiety, perceived stress and fatigue with poststroke Subjective Cognitive Complaints (SCC). Used a cross-sectional design to obtain SCC and psychological measures for 208 patients, assessing SCC using the Checklist for Cognitive and Emotional consequences following stroke inventory. Concludes that interventions aimed at improving psychological resilience and energy levels might be a worthwhile addition to stroke rehabilitation programmes.]

[Relationship Between Pre-Stroke Physical Activity and Symptoms of Post-Stroke Anxiety and Depression: an observational study.](#)

Bovim, R. et al

*Journal of Rehabilitation Medicine*, vol. 51(10) pp. 755-760

Nov 2019

[Used secondary analyses of a prospective observational multicentre study involving stroke patients from 11 Norwegian stroke units to investigate the association between pre-stroke physical activity and symptoms of anxiety and depression 3 months after stroke. Also aimed to investigate how self-reported physical activity changed.]

## Rehabilitation

[Interventions for preventing falls in people after stroke.](#)

Denissen, S. et al

*Cochrane Database of Systematic Reviews*, 2019 Issue 10. No. CD008728

Oct 2019

[Updated version of the original review published in 2013 to evaluate the effectiveness of interventions aimed at preventing falls in people after stroke. Included 14 studies (6 published since original review) with a total of 1,358 participants. Low to very low quality evidence exists that this population benefits from exercises to prevent falls, but

not to reduce number of fallers. Fall research does not in general or consistently follow methodological gold standards, especially with regard to fall definition and time post stroke.]

[Moving Stroke Rehabilitation Evidence into Practice: a systematic review of randomized controlled trials.](#)

Bird, M-L. et al

*Clinical Rehabilitation*, vol. 33(10) pp. 1586-1595

Oct 2019

[16 trials were included in this review (250 sites, 14,689 patients), evaluating a range of interventions aimed at moving research evidence into stroke rehabilitation practice. Body of literature considered to be of low quality]

## **Risk of stroke**

[Comparison of risk of stroke in patients treated with peritoneal dialysis and hemodialysis: a systematic review and meta-analysis.](#)

Zhan, X. et al

*Renal Failure*, vol. 41(1) pp. 650-656

Nov 2019

[5 studies were included in this review (1,219,245 patients). Observed that peritoneal dialysis (PD) patients were less likely to develop hemorrhagic stroke than hemodialysis (HD) patients and the risk for ischemic stroke was significantly higher for PD patients than for HD patients among non-Asian patients. However, findings could be biased due to the heterogeneity of the included studies.]

[Does Chronic Kidney Disease Predict Stroke Risk Independent of Blood Pressure? A systematic review and meta-regression.](#)

Kelly, D.M. and Rothwell, P.M.

*Stroke*, vol. 50(11) pp. 3085-3092

Oct 2019

[Hypothesis: low glomerular filtration rate is a risk factor for stroke independent of cardiovascular risk factors. 85 studies (417,098 participants, 72,996 strokes) included in meta-analysis. Incident stroke risk was increased among participants with estimated glomerular filtration rate <60 mL/min per 1.73 m<sup>2</sup>, but there was substantial heterogeneity between studies and the association was reduced after adjustment for cardiovascular risk factors.]

[Inherited Thrombophilia and the Risk of Arterial Ischemic Stroke: A systematic review and meta-analysis.](#)

Chiasakul, T. et al

*Journal of the American Heart Association*, vol. 8(19) pp.1-51

Oct 2019

[Identified 68 studies (11,916 stroke patients and 96,057 controls) for this review which aimed to evaluate the association between inherited thrombophilia and risk of arterial ischemic stroke in adults. Conclusions: Inherited thrombophilias (factor V Leiden, prothrombin G20210A mutation, protein C deficiency, and protein S deficiency) are associated with an increased risk of arterial ischemic stroke in adults.]

[Newly Detected Atrial Fibrillation after Acute Stroke: a narrative review of causes and implications.](#)

Wang, Y. et al

*Cardiology*, Epub ahead of print

Oct 2019

[A narrative review which aimed to introduce the definition and epidemiology of newly detected atrial fibrillation after stroke with updated information and elucidate the potential pathophysiology, such as autonomic imbalance, catecholamine surge, poststroke systemic inflammation, and microvesicles and microRNAs.]

[Non-Alcoholic Fatty Liver Disease and Risk of Incident Acute Myocardial Infarction and Stroke: findings from matched cohort study of 18 million European adults.](#)

Alexander, M. et al

*BMJ*, vol. 367(8217)

Oct 2019

[A matched cohort study of 120,795 adults with a recorded diagnosis of non-alcoholic fatty liver disease (NAFLD) or non-alcoholic steatohepatitis and no other liver diseases from four European countries as identified through electronic primary healthcare databases before 31 December 2015. Primary outcome was incident fatal or non-fatal acute myocardial infarction (AMI) and ischaemic or unspecified stroke. Conclusions: The diagnosis of NAFLD in current routine care of 17.7 million patients appears not to be associated with AMI or stroke risk after adjustment for established cardiovascular risk factors. Cardiovascular risk assessment in adults with a diagnosis of NAFLD is important but should be done in the same way as for the general population.]

[Socioeconomic Status and Stroke Incidence, Prevalence, Mortality, and Worldwide Burden: an ecological analysis from the Global Burden of Disease Study 2017.](#)

Avan, A. et al

*BMC Medicine*, vol. 17(1)

Oct 2019

[Used data from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017 to analyse trends in global and socioeconomic status specific age-standardised stroke incidence, prevalence, mortality, and disability-adjusted life years (DALYs) lost from 1990 to 2017. Conclusions: Almost half of stroke-related deaths are attributable to poor management of modifiable risk factors, and thus potentially preventable. ]

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

[A Framework for Designing Inpatient Stroke Rehabilitation Facilities: A new approach using interdisciplinary Value-Focused Thinking.](#)

Lipson-Smith, R. et al

*Health Environments Research & Design Journal*, vol. 12(4) pp. 142-158

Oct 2019

[This study aimed to use value-focused thinking to investigate what is important in the design of inpatient stroke rehabilitation facility buildings. Past patients, clinicians, academics, architects, designers and wayfinders were invited to participate in 2 workshops. 30 attended and developed a rehabilitation-specific framework which the researchers suggest should be considered by designers, planners and developers alongside evidence from other healthcare settings. Value-focused thinking was considered effective for engaging experts from multiple disciplines.]

[Technological Innovation for Prehospital Stroke Triage: ripe for disruption.](#)

Martinez-Gutierrez, J.C. et al

*Journal of NeuroInterventional Surgery*, vol. 11(11) pp. 1085-1090

Nov 2019

[A narrative review which explores existing, fledgling, and potential future technologies for application in the prehospital space. Technology discussed: emergency medical services (EMS) and stroke scale apps, mobile stroke unit technology, other ambulance-based stroke detection technology, electromagnetic detection, accelerometer-based detection, microwave detection, infrared detection, ECG based detection, ultrasound detection, and artificial intelligence to automate clinical stroke detection. Concludes that the major challenges to tackle for future improvement in prehospital stroke care are that of public awareness, emergency medical service detection, and triage, and improved systems of stroke care.]

## Surgery

### [Beyond the First Pass: revascularization remains critical in stroke thrombectomy.](#)

Jindal, G. et al

*Journal of NeuroInterventional Surgery*, vol. 11(11) pp. 1095-1099

Nov 2019

[Evaluated the first pass effect on outcome and the influence of revascularization by performing a retrospective analysis of anterior cerebral circulation stroke thrombectomy cases from April 2012 to April 2018 (205 patients)  
Conclusions: First pass thrombectomy patients have better functional outcomes compared with beyond-first pass patients. This effect is related at least in part to a higher rate of revascularization in one pass patients.  
Revascularization beyond the first pass should continue to be the goal of stroke thrombectomy.]

### [Current Endovascular Strategies for Posterior Circulation Large Vessel Occlusion Stroke: Report of the Society of NeuroInterventional Surgery Standards and Guidelines Committee](#)

Kayan, Y. et al

*Journal of NeuroInterventional Surgery*, vol.11(10) pp. 1055-1062

Oct 2019

[A narrative review providing an update on the diagnosis, treatment, and endovascular techniques for posterior circulation emergent large vessel occlusion (pc-ELVO). Includes summary of recommendations.]

### [Greater Infarct Growth Limiting Effect of Mechanical Thrombectomy in Stroke Patients with Poor Collaterals.](#)

Renu, A. et al

*Journal of NeuroInterventional Surgery*, vol 11(10) pp. 989-994

Oct 2019

[Assessed whether the extent of collaterals had modifying effects on the amount of ischemic tissue saved from infarction with mechanical thrombectomy (MT) over best medical treatment (BMT). Used a single center cohort of 339 consecutive patients with proximal occlusions in the carotid territory. The primary outcome measure was the interaction between collaterals and MT on infarct growth. MT was associated with lower mortality than BMT in patients with poor collaterals only.]

### [Mechanical Thrombectomy in Nonagenarians with Acute Ischemic Stroke.](#)

Meyer, L. et al

*Journal of NeuroInterventional Surgery*, vol. 11(11) pp. 1091-1095

Nov 2019

[Aimed to identify whether mechanical thrombectomy (MT) is a safe and effective therapy for ischemic stroke in patients aged 90 or over. Retrospectively reviewed 79 patients from 3 neurointerventional centres between 2013 and 2017. Only occlusions within the anterior circulation were included in the results. Conclusion: MT in nonagenarians leads to high mortality rates and less frequently good functional outcome compared with younger patient cohorts in previous large randomized trials. However, MT appears to be safe and beneficial for a certain number of very elderly patients and therefore should generally not be withheld from nonagenarians.]

### **Airedale NHS Library**

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Outside of these hours it is possible to access the library computer room and study area.

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 [Airedale.library@anhst.nhs.uk](mailto:Airedale.library@anhst.nhs.uk)

 01535 294412

Airedale General Hospital – Location B11