

# Library Current Awareness Bulletin

## Stroke – January 2021


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### News

[Does coronavirus cause stroke? A look at the current research](#)

*Stroke Association*  
December 2020

[“Since the start of the coronavirus pandemic in early 2020, there have been reports of coronavirus patients also having a stroke. The Stroke Association, health and social care professionals, and researchers in the UK continue to study coronavirus and stroke, and deliver treatment and care for people that have a stroke.”]

[Symptoms of depression linked to increased risk of heart disease and stroke](#)

*British Heart Foundation*  
December 2020

[People who experience symptoms of depression are more likely to go on to develop heart disease or suffer a stroke than those who report good mental health, according to research part-funded by the British Heart Foundation and published in JAMA.]

[Thrombolysis in unknown stroke onset: broadening the horizon with advanced brain imaging](#)

*European Stroke Organisation*  
December 2020

[A short summary of data presented at the virtual ESO-WSO 2020 conference.]

### [Trial resumes to prevent dementia after a stroke](#)

*British Heart Foundation*

December 2020

["The LACI-2 trial, which is led by the University of Edinburgh, was paused because of the coronavirus pandemic but is investigating if cheap, existing drugs currently used to treat other heart and circulatory diseases could help patients who have a lacunar stroke." ]

## **COVID-19: Impact on Stroke Services**

### [Impact of COVID-19 on stroke caseload in a major hyperacute stroke unit](#)

Mag Uidhir, F., Bathula, R., Sivagnanaratnam, A., Abdul-Saheb, M., Devine, J., and Cohen, D.L.

*Journal of Stroke and Cerebrovascular Diseases*, vol. 29(12)

December 2020

["Northwick Park Hospital in London, United Kingdom (UK) is one of the busiest stroke units in the country and is located in one of the areas most heavily affected by the COVID-19 pandemic in the first half of 2020. Admissions to the stroke unit and changes during the peak of COVID-19 were reviewed. Compared with the previous year, mean 96 patients were admitted with suspected stroke during April and May 2020 compared with mean 116 per month in non-COVID periods, ratio 0.82,  $P = 0.01$ . This reduction involved both strokes and mimics and was unlikely to have occurred by chance. Numbers of patients thrombolysed and of patients referred for thrombectomy decreased dramatically during this time. Mechanisms by which the COVID-19 pandemic and the March lockdown may have affected admissions to the unit are discussed. Reduced admissions to the stroke unit allowed it to contribute its resources to the care of patients with COVID-19 during the peak of admissions." ]

## **Drug Therapy**

### [Effects of atorvastatin and aspirin on post-stroke epilepsy and usage of levetiracetam](#)

Zhao, T., Feng, X., Zhou, C., Ding, Y., and Lin, W.

*Medicine*, vol. 99(50)

December 2020

[The aim of this study was to further evaluate the effect of atorvastatin and aspirin on post-stroke epilepsy (PSE) and their effect on the usage of the antiepileptic drug levetiracetam in PSE patients. Patients, aged 65 to 85 years, with newly diagnosed post-ischemic stroke epilepsy from August 30, 2014 to August 30, 2018 were included in the study, with the exclusion of those with coexisting conditions. Initially, 1321 patients were included, and 780 remained in the study at the 1-year follow-up. During the study, atorvastatin treatment with or without aspirin reduced the number of clinical epileptic episodes in PSE patients. It also reduced the dosage of levetiracetam and achieved better control of epilepsy compared to levetiracetam mono-treatment. Aspirin co-treatment with levetiracetam did not result in a significant improvement. However, the combination of aspirin with atorvastatin significantly reduced the number of seizures compared to atorvastatin treatment alone.]

### [Filling the gaps on stroke research: Focus on inflammation and immunity](#)

Levard, D., Buendia, I., Lanquetin, A., Glavan, M., Vivien, D., and Rubio, M.

*Brain, Behavior, and Immunity*, vol. 91 pp. 649-667

January 2021

[In this review the authors describe the main actors on stroke inflammatory and immune responses based on the available preclinical data, highlighting that the link between leukocyte infiltration, lesion volume and neurological outcome remains unclear. The authors describe what is known on neuroinflammation and immune responses in stroke patients, and summarise the results of the clinical trials on immunomodulatory drugs. In order to understand the gap between clinical trials and preclinical results on stroke, there is discussion of the experimental results that served as the basis for the summarised clinical trials on immunomodulatory drugs, focusing on (i) experimental stroke models, (ii) the timing and selection of outcome measuring, (iii) alternative entry routes for leukocytes into the ischemic region, and (iv) factors affecting stroke outcome such as gender differences, ageing, comorbidities like hypertension and diabetes, obesity, tobacco, alcohol consumption and previous infections like Covid-19.]

### [Iron chelators for acute stroke](#)

Van der Loo, L.E., Aquarius, R., Teernstra, O., Klijn, C.J.M., Menovsky, T., Dijk, J.M.C., Bartels, R., and Boogaarts, H.D.  
*Cochrane Database of Systematic Reviews*  
November 2020

[This is the first update of the original Cochrane Review published in 2012. The purpose was to evaluate the effectiveness and safety of iron-chelating drugs in people with acute stroke. The reviewers included randomised controlled trials (RCTs) of iron chelators versus no iron chelators or placebo for the treatment of acute stroke, including subarachnoid haemorrhage. Two RCTs (333 participants) were eligible for inclusion; both compared the iron-chelating agent deferoxamine against placebo. The authors could not demonstrate any benefit for the use of iron chelators in spontaneous intracerebral haemorrhage. The added value of iron-chelating therapy in people with ischaemic stroke or subarachnoid haemorrhage remains unknown.]

### [Thrombolysis and bridging therapy in patients with acute ischaemic stroke and Covid-19](#)

Cappellari, M. Zini, A. Sangalli, D. Cavallini, A. Reggiani, M. Sepe, F.N., Rifino, N. et al  
*European Journal of Neurology*, vol. 27(12) pp. 2641-2645  
December 2020

[This study aimed to assess the 1-month outcome in ischaemic stroke patients with Covid-19 infection who received IVT alone or before thrombectomy (bridging therapy). As a collaboration initiative promoted by the Italian Stroke Organization, all Italian stroke units (n = 190) were contacted and invited to participate in data collection on stroke patients with Covid-19 who received IVT. Seventy-five invited centres agreed to participate. Thirty patients received IVT alone and 17 received bridging therapy between 21 February 2020 and 30 April 2020 in 20 centres (n = 18, Northern Italy; n = 2, Central Italy). At 1 month, 14 (30.4%) patients died and 20 (62.5%) survivors had a modified Rankin Scale (mRS) score of 3 to 5. At 24 to 36 hours, asymptomatic intracerebral haemorrhage (ICH) was reported in eight (17.4%) patients and symptomatic ICH (sICH) in two (4.3%) patients. Causes of death were severe ischaemic stroke (n = 8), a new ischaemic stroke (n = 2), acute respiratory failure (n = 1), acute renal failure (n = 1), acute myocardial infarction (n = 1), and endocarditis (n = 1). In survivors with a 1-month mRS score of 3 to 5, baseline glucose level was higher, whereas endovascular procedure time in cases of bridging therapy was longer. Baseline National Institutes of Health Stroke Scale glucose and creatinine levels were higher in patients who died.]

## Neuroscience & Neuroimaging

### [Association between small vessel disease markers, medial temporal lobe atrophy and cognitive impairment after stroke: a systematic review and meta-analysis](#)

Wang, F., Hua, S., Zhang, Y., Yu, H., Zhang, Z., Zhu, J., Liu, R., Jiang, Z.  
*Journal of Stroke and Cerebrovascular Diseases*, vol. 30(1)  
January 2021

[PUBMED, MEDLINE, EMBASE and the Cochrane Library were searched for studies investigating imaging predictors of cognitive impairment or dementia following stroke. Meta-analysis was conducted to compute the odds ratios (ORs). Thirteen studies were included and only ten of them, comprising 2,713 stroke patients, were eligible for inclusion in the meta-analysis. Medial temporal lobe atrophy (MTLA) was significantly correlated with PSCI (OR = 1.97, 95% CI: 1.48-2.62, I<sup>2</sup> = 0.0%). In addition, white matter hyperintensities (WMH), as a neuroimaging marker of SVD, were associated with PSCI (OR = 1.17, 95% CI: 1.12-1.22, I<sup>2</sup> = 0.0%). However, the presence of lacunar infarcts and enlarged perivascular spaces (EPVS) were not associated with the risk of PSCI.]

## Rehabilitation

### [Assessing Self-Reported Mood in Aphasia Following Stroke: Challenges, Innovations and Future Directions](#)

Barrows, P.D., Thomas, S.A., Van Gordon, W.  
*Journal of Stroke and Cerebrovascular Diseases*, vol. 30(1)  
January 2021

["Following a critical review of the neuropsychological aspects of self-reported mood, this paper evaluates the problems in reporting mood after stroke due to aphasia, and discusses implications for the design of adapted instruments. The paper then appraises the construction and psychometric properties of existing, adapted self-report measures developed to try and address these problems, and evaluates their utility and limitations. This includes a

focus on the recently validated tablet-based Dynamic Visual Analog Mood Scales (D-VAMS), which uses innovative non-verbal assessment methods based on facial expression modulated via a slider control on a touchscreen interface. Currently, most studies evaluating recovery interventions simply omit individuals with aphasia because of the difficulty of assessing mood and quality of life in this population. However, adapted scales such as the D-VAMS appear to represent an important step forward in assessing mood in people with language impairments, with the use of interactive modulated imagery having wider applications for nonverbal communication as well as the quantification of subjective phenomena.”]

#### [Interventions for improving oral health in people after stroke](#)

Campbell, P., Bain, B., Furlanetto, D.L.C., and Brady, M.C.

*Cochrane Database of Systematic Reviews*

December 2020

[This systematic review aimed to compare the effectiveness of oral health care (OHC) interventions with usual care or other treatment options for ensuring oral health in people after a stroke. The authors included randomised controlled trials (RCTs) that evaluated one or more interventions designed to improve the cleanliness and health of the mouth, tongue and teeth in people with a stroke who received assisted OHC led by healthcare staff. They included trials with a mixed population provided they could extract the stroke-specific data. The primary outcomes were dental plaque or denture plaque. Secondary outcomes included presence of oral disease, presence of related infection and oral opportunistic pathogens related to OHC and pneumonia, stroke survivor and providers' knowledge and attitudes to OHC, and patient satisfaction and quality of life. Fifteen RCTs (22 randomised comparisons) involving 3,631 participants with data for 1,546 people with stroke met the selection criteria. The authors found low- to very low-quality evidence suggesting that OHC interventions can improve the cleanliness of patient's dentures and stroke survivor and providers' knowledge and attitudes. There is limited low-quality evidence that selective decontamination gel may be more beneficial than placebo at reducing the incidence of pneumonia. Improvements in the cleanliness of a patient's own teeth was limited. They judged the quality of the evidence included within meta-analyses to be low or very low quality. There remains a lack of high-quality evidence of the optimal approach to providing OHC to people after stroke.]

#### [Robot-assisted Gait Training Using Welwalk in Hemiparetic Stroke Patients: An Effectiveness Study with Matched Control](#)

Li, T., Hirano, S., Tanabe, S., Saitoh, E., Yamada, J., Mukaino, M., Watanabe, M., Sonoda, S., and Otaka, Y.

*Journal of Stroke and Cerebrovascular Diseases*, vol. 29(12)

December 2020

[This prospective study aimed to investigate the effectiveness of gait training using Welwalk in hemiparetic stroke patients in a real clinical setting. 36 hemiparetic stroke patients underwent gait training using Welwalk. Walking ability improvement efficiency was examined using Functional Independence Measure (FIM)-walk as the primary outcome, which was compared with the matched control group (n=36) who underwent conventional rehabilitation. Other outcomes were the actual gait training period using Welwalk, raw FIM-walk score, lower extremity motor functions score in Stroke Impairment Assessment Set at discharge, and duration from stroke onset until discharge. The improvement efficiency of the FIM-walk was significantly higher in the Welwalk group than in the matched control group (control  $0.48 \pm 0.31$ , Welwalk  $0.80 \pm 0.38$ , p-value < 0.001). The mean gait training period using Welwalk was five weeks. No significant differences were found in other outcomes between the Welwalk group and the matched control group.]

#### [The caregiver experience after stroke in a COVID-19 environment: a qualitative study in inpatient rehabilitation](#)

Sutter-Leve, R., Passint, E., Ness, D., Rindflesch, A.

*Journal of Neurologic Physical Therapy*, vol. 45 (1) pp. 14-20

January 2021

[This study aimed to assess the level and nature of stress experienced by caregivers of persons with newly-acquired stroke in the inpatient rehabilitation setting and how the COVID-19 pandemic has impacted the caregiver experience. Recruitment occurred from a single inpatient rehabilitation facility. Participants were administered the Perceived Stress Scale and then completed qualitative semi-structured interviews. The investigators used a phenomenological, iterative approach to collect and analyse qualitative data. The data were independently coded and categorised before being consolidated into primary themes and subthemes. Eleven informal caregivers' perspectives generated 13 subthemes across four primary thematic categories: COVID-19 impact, concerns of the

caregiver, coping strategies, and important aspects of the caregiver experience. COVID-19 social distancing necessitated new visitor policies, which presented additional challenges for caregivers. Caregiver attendance at therapy sessions and frequent, direct communication between staff and caregivers improved caregiver readiness for family member discharge following inpatient rehabilitation. This study shared perspectives from a distinctive time during the COVID-19 pandemic. If visitation for multiple therapy sessions is prohibited, the authors recommend taking alternative measures to keep the caregiver involved in the plan of care.]

#### [Validity and reliability of the 3-meter backward walk test in individuals with stroke](#)

Abit Kocaman, A., Aydoğan Arslan, S., Uğurlu, K., Katırcı Kırmaç, Z.I., and Keskin, E.D.

*Journal of Stroke and Cerebrovascular Diseases*, vol. 30(1)

January 2021

[The aim of this study was to reveal the test-retest reliability and validity of the 3-m backward walk test (3MBWT) in stroke patients. study included a total of 41 stroke patients [median age = 59 years]. 3MBWT, Berg Balance Scale (BBS), Timed Up and Go test (TUG) were applied to the patients. The second evaluation (retest) was carried out by the same physiotherapist two days following the first evaluation (test) in order to measure test-retest reliability. Cronbach's alpha coefficient was found to be 0.974 (excellent). For intra-rater agreement, the ICC values in the individual test were 0.985. The SEM value was 1.11 sec, the MDC value was found to be 1.57 sec. A moderate correlation was revealed between the 3 m-backward walking speed and BBS ( $r = -0.691$ ,  $p = 0.001$ ) and TUG ( $r = 0.849$ ,  $p = 0.001$ ). The 3MBWT was observed to be valid and reliable in stroke individuals and an effective and reliable tool for measuring dynamic balance and falls in stroke.]

## Risk of Stroke

#### [Clinical characteristics of stroke with COVID-19: A systematic review and meta-analysis](#)

Yamakawa, M., Kuno, T., Mikami, T., Takagi, H., and Gronseth, G.

*Journal of Stroke and Cerebrovascular Diseases*, vol. 29(12)

December 2020

[PubMed and EMBASE were searched on June 10, 2020, to investigate COVID-19 and stroke through retrospective cross-sectional studies, case series/reports according to PRISMA guidelines. Study-specific estimates were combined using one-group meta-analysis in a random-effects model. 10 retrospective cohort studies and 16 case series/reports were identified including 183 patients with COVID-19 and stroke. The frequency of detected stroke in hospitalised COVID-19 patients was 1.1% ([95% CI]: [0.6-1.6],  $I^2 = 62.9\%$ ). Mean age was 66.6 ([58.4-74.9],  $I^2 = 95.1\%$ ), 65.6% was male (61/93 patients). Mean days from symptom onset of COVID-19 to stroke was 8.0 ([4.1-11.9],  $p < 0.001$ ,  $I^2 = 93.1\%$ ). D-dimer was 3.3  $\mu\text{g/mL}$  ([1.7-4.9],  $I^2 = 86.3\%$ ), and cryptogenic stroke was most common as etiology at 50.7% ([31.0-70.4]  $I^2 = 64.1\%$ , 39/71 patients). Case fatality rate was 44.2% ([27.9-60.5],  $I^2 = 66.7\%$ , 40/100 patients). This systematic review assessed the frequency and clinical characteristics of stroke in COVID-19 patients. The frequency of detected stroke in hospitalised COVID-19 patients was 1.1% and associated with older age and stroke risk factors. Frequent cryptogenic stroke and elevated d-dimer level support increased risk of thromboembolism in COVID-19 associated with high mortality. Further study is needed to elucidate the pathophysiology and prognosis of stroke in COVID-19 to achieve most effective care for this population.]

#### [Increased risk of acute stroke among patients with severe COVID-19: a multicentre study and meta-analysis](#)

Siepmann, T., Sedghi, A., Simon, E., Winzer, S., Barlinn, J. et al

*European Journal of Neurology*, vol. 28(1) pp. 238-247

January 2021

[This study aimed to define the risk of acute stroke in patients with severe and non-severe COVID-19. This was an observational, multicentre cohort study in four participating hospitals in Saxony, Germany which aimed to characterise consecutive patients with laboratory-confirmed COVID-19 who experienced acute stroke during hospitalisation. In addition, a systematic review was conducted including data from observational studies of acute stroke in COVID-19 patients. Data were extracted by two independent reviewers and pooled with multicentre data to calculate risk ratios (RRs) and 95% confidence intervals (95% CIs) for acute stroke related to COVID-19 severity using a random-effects model. Between-study heterogeneity was assessed using Cochran's Q and I<sup>2</sup> statistics. Of 165 patients hospitalised for COVID-19 (49.1% males, median age = 67 years [57–79 years], 72.1% severe or critical) included in the multicentre study, overall stroke rate was 4.2% (95% CI: 1.9–8.7). Systematic literature search

identified two observational studies involving 576 patients that were eligible for meta-analysis. Amongst 741 pooled COVID-19 patients, overall stroke rate was 2.9% (95% CI: 1.9–4.5). Risk of acute stroke was increased for patients with severe compared to non-severe COVID-19 (RR = 4.18, 95% CI: 1.7–10.25; P = 0.002) with no evidence of heterogeneity (I<sup>2</sup> = 0%, P = 0.82).]

#### [Quality of stroke patient information applied in randomized controlled trials – literature review](#)

Alegiani, A.C., Rahn, A.C., Steckelberg, A., Thomalla, G., Heesen, C., and Köpke, S.

*Frontiers in Neurology*

December 2020

[This systematic review aimed to evaluate the quality of patient information materials for stroke patients by using randomised controlled trials, applying quality criteria for evidence-based patient information (EBPI). The reviewers screened 15,507 results and identified 30 eligible studies. Information materials were available for only eight studies. Analyses revealed that all available materials had important shortcomings concerning EBPI quality criteria. Frequently, treatment effects were reported only narratively without providing absolute numbers, values, or frequencies. Quality of materials differed, but none sufficiently fulfilled EBPI quality criteria. Unsatisfactory trial results concerning patient knowledge and patient involvement in decision-making may at least partially be explained by limitations of the provided materials.]

#### [Stroke risk, phenotypes, and death in COVID-19: systematic review and newly reported cases](#)

Fridman, S., Bres Bullrich, M., Jimenez-Ruiz, A., Costantini, P. et al

*Neurology*, vol. 95(24)

December 2020

[This study aimed to investigate the hypothesis that strokes occurring in patients with coronavirus disease 2019 (COVID-19) have distinctive features. Stroke risk, clinical phenotypes, and outcomes in this population were investigated. A systematic search was carried out and this found 10 studies reporting stroke frequency among patients with COVID-19. These were pooled with one unpublished series from Canada. The reviewers applied random-effects meta-analyses to estimate the proportion of stroke among COVID-19. An additional systematic search for cases series of stroke in patients with COVID-19 (n = 125) was carried out, and these data were pooled with 35 unpublished cases from Canada, the United States, and Iran. The reviewers analysed clinical characteristics and in-hospital mortality stratified into age groups (<50, 50–70, >70 years). They applied cluster analyses to identify specific clinical phenotypes and their relationship with death. The proportions of patients with COVID-19 with stroke (1.8%, 95% CI 0.9%–3.7%) and in-hospital mortality (34.4%, 95% CI 27.2%–42.4%) were exceedingly high. Mortality was 67% lower in patients under 50 years of age relative to those over 70 years of age (odds ratio [OR] 0.33, 95% CI 0.12–0.94, p = 0.039). Large vessel occlusion was twice as frequent (46.9%) as previously reported and was high across all age groups, even in the absence of risk factors or comorbid conditions. A clinical phenotype characterised by older age, a higher burden of comorbid conditions, and severe COVID-19 respiratory symptoms was associated with the highest in-hospital mortality (58.6%) and a three times higher risk of death than the rest of the cohort (OR 3.52, 95% CI 1.53–8.09, p = 0.003).]

#### [Time of Stroke Onset in Coronavirus Disease 2019 Patients Around the Globe: A Systematic Review and Analysis](#)

Valencia-Enciso, N., Ortiz-Pereira, M., Zafra-Sierra, M.P., Espinel-Gómez, L., and Bayona, H.

*Journal of Stroke and Cerebrovascular Diseases*, vol. 29(12)

December 2020

[Based on the hypothesis that an important temporal relationship exists between COVID-19 severity and stroke onset, a systematic review of the available literature was conducted using Pubmed and Scopus to find studies reporting patients with Coronavirus disease 19 and stroke. Clinical, sociodemographic and laboratory characteristics of patients were extracted and analysed. Forty seven studies and 176 patients were included, with a mean age of 63.1 years (SD= 16 n=122), most of them were males (63.2% n=171). The most frequent etiology was cryptogenic 40.9% n=66), and a mean National Institute of Health Stroke Scale of 14.4 points was found (SD= 8.6 n=73). Large vessel occlusion was reported in 65.9% patients (n=91) and these patients were younger with greater stroke severity. D-dimer, C-reactive protein, fibrinogen, ferritin and lactate dehydrogenase were elevated in most patients with reported findings. Most patients had severe Coronavirus disease 2019. The mean time from onset of respiratory symptoms to stroke was 9 days (SD=9.9), the shortest time was noted in those with mild and moderate disease.]

### [Unusual arterial thrombotic events in Covid-19 patients](#)

de Roquetaillade, C., Chousterman, B. G., Tomasoni, D., Zeitouni, M., Houdart, E., Guedon, A., Reiner, P., Bordier, R., Gayat, E., Montalescot, G., Metra, M. and Mebazaa, A.

*International Journal of Cardiology*, vol. 323 pp.281-284

January 2021

[This study aimed to describe the clinical and biological characteristics of COVID-19 patients presenting with an associated arterial thromboembolic event. This was a retrospective study in three centres between France and Italy. All patients with a confirmed SARS-CoV-2 infection and arterial thromboembolic events were included in the analysis. From March 8th to April 25th 2020, 20 patients (24 events) were identified with arterial thromboembolic events over 209 admitted patients (9.6%) with severe Covid-19 infection. Arterial thrombotic events included acute coronary occlusions (n = 9), stroke (n = 6), limb ischemia (n = 3), splenic infarcts (n = 3), aortic thrombosis (n = 2) and occlusive mesenteric ischemia (n = 1). At the time of the event, 10/20 (50%) of patients received thromboprophylaxis, 2/20 (10%) were receiving treatment dose anticoagulation and 5/20 (25%) were receiving antiplatelet therapy. The observations suggest that serious arterial thrombotic events might occur in Covid-19 patients, however the exact incidence of such events and the best way to prevent them remains to be investigated.]

## Thrombectomy

### [Adjuvant high-flow normobaric oxygen after mechanical thrombectomy for anterior circulation stroke: a randomized clinical trial](#)

Cheng Z., Geng, X., Tong, Y. Gao, J., Ma L., Li F., Du H., Rajah G.B., Ding Y., Dornbos D., Hussain, M., and Fisher M.

*Neurotherapeutics*

January 2021

[This randomised controlled trial (RCT) investigated the safety and efficacy of high-flow normobaric oxygen (NBO) after endovascular recanalization in anterior circulation stroke. Eligible patients were randomised to receive high-flow NBO by a Venturi mask (FiO<sub>2</sub> 50%, flow 15 L/min) or routine low-flow oxygen supplementation by nasal cannula (flow 3 L/min) after vessel recanalization for 6 h. A total of 91 patients were treated with high-flow NBO. NBO treatment revealed a common odds ratio of 2.2 (95% CI, 1.26 to 3.87) favouring the distribution of global disability scores on the mRS at 90 days. The mortality at 90 days was significantly lower in the NBO group than in the control group, with an absolute difference of 13.86% (rate ratio, 0.35; 95% CI, 0.13–0.93). A significant reduction of infarct volume as determined by MRI was noted in the NBO group. The median infarct volume was 9.4 ml versus 20.5 ml in the control group (beta coefficient, – 20.24; 95% CI, – 35.93 to – 4.55). No significant differences were seen in the rate of sICH, pneumonia, urinary infection, and seizures between the 2 groups. This study suggests that high-flow NBO therapy after endovascular recanalization is safe and effective in improving functional outcomes, decreasing mortality, and reducing infarct volumes in anterior circulation stroke patients within 6 h from stroke onset.]

### [Influence of the number of passes of Stent-Retriever on the occurrence of parenchymal hematomas in stroke patients undergoing thrombectomy](#)

Delgado A.F., Jimenez Gomez, E., Bravo Rey, I., Bravo-Rodriguez F.D.A., Oteros Fernandez, R., Valverde Moyano R.

*Interdisciplinary Neurosurgery*, vol. 24

June 2021

[The authors retrospectively analysed the impact of the number of passes on patients treated between January 2017 and April 2020 in a single treatment centre. The main objective was to assess the correlation of the number of passes with the percentage of PH assessed by CT 24 h after endovascular treatment. Successful recanalization was defined as TICIm 2b-3. A good clinical outcome was defined as 90-day mRS ≤ 2. 369 patients were included in the study. Successful recanalization was achieved in 85.09%. Recanalization rates decreased sequentially as the number of passes increased, but the rate achieved by ≥ 6 passes was still 31.25%. ≥ 3 passes had a significantly higher incidence of PH (p = 0.026). In a multivariate analysis, the ASPECTS scale, the number of passes, and arterial puncture to recanalization time, were independent predictors related to PH. Of the 18 parenchymal hematomas, 5 occurred in patients with ≥ 6 passes.]

[Repeated endovascular thrombectomy in patients with acute ischemic stroke in a single center](#)

Lee, H.J., Kwak, H.S., Chung, G.H., and Park, J-S.

*Journal of Stroke and Cerebrovascular Diseases*, vol. 30(1)


January 2021

[Patients with acute ischemic stroke treated with endovascular thrombectomy may be treated with repeat endovascular thrombectomy (rEVT) in case of recurrent large vessel occlusion (LVO). The purpose of this study was to report the frequency, timing, and outcomes of rEVT in a single centre. Of 1,025 patients treated between January 2011 and January 2020, 23 (2.2%) underwent rEVT. The median time between the first and second procedure was 185 days; Seven (30.4%) patients were re-treated within 30 days. Eleven patients (47.8%) had different occlusion sites between the two procedures. Good clinical outcome of patients with late ipsilateral recurrence was significantly higher than that of patients with late contralateral recurrence (83.3% vs. 16.7,  $p = 0.027$ ). Overall good functional outcome after the second procedure was 43.5% (10/23). Overall good functional outcome of early and late recurrence groups were similar (57.1% vs. 37.5%,  $p = 0.650$ ). One patient died due to an underlying cardiac problem.]

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