



PRACTICE-CHANGING UPDATES

ARTICLES

- 1 [Intravenous Thrombolysis for Suspected Ischemic Stroke with Seizure at Onset](#)
Alexandros A. Polymeris, Sami Curtze, Hebum Erdur, Christian Hametner, Mirjam R. Heldner, Adrien E. Groot et. al
Ann Neurol. 2019 Aug 21. doi: 10.1002/ana.25582.
PMID: 31435960

The practice of Seizure at Onset (SaO) as a relative contraindication for intravenous thrombolysis (IVT) in patients with acute ischaemic stroke is not evidence-based. This multicentre, IVT-registry-based study investigated the prognostic significance of SaO in patients treated with IVT for acute ischaemic stroke by assessing the association between SaO and symptomatic ICH (sICH, ECASS-II definition) as well as 3-month mortality and functional outcomes on the modified Rankin Scale (mRS). SaO was not found to be an independent predictor of poor prognosis- suggesting that withholding IVT from patients with assumed ischaemic stroke presenting with SaO may be unjustified.

TECHNOLOGY AND MEDICINE

ARTICLES

- 1 [Artificial Intelligence Transforms the Future of Health Care.](#) **FULL ARTICLE ACCESS**
Noorbakhsh-Sabet N, Zand R, Zhang Y, Abedi V.
Am J Med. 2019 Jul;132(7):795-801.
PMID: 30710543

Artificial Intelligence (AI) focuses on how computers learn from data and mimic human thought processes. Its ability to increase learning capacity and provide decision-support systems is transforming the future of health care. Although more data is available than ever, only a fraction is being curated, integrated, understood, and analyzed. This article is a review of applications for machine learning in health care, with a focus on clinical, translational and public health applications. It also provides an overview of the important role of privacy, data sharing, and genetic information.



2 [**Can Patients Trust Online Health Information? A Meta-narrative Systematic Review Addressing the Quality of Health Information on the Internet.**](#)

Daraz L, Morrow AS, Ponce OJ, Beuschel B, Farah MH, Katabi A, Alsawas M, Majzoub AM, Benkhadra R et. al

J Gen Intern Med. 2019 Sep;34(9):1884-1891.

PMID: 31228051

The Internet is a leading source of health information accessed by patients and the general public. It is crucial this information is reliable and accurate. This systematic review evaluated the overall quality of online health information for patient and public use based on a pre-established protocol and reported according to the PRISMA statement. From 3393 references, 153 cross-sectional studies evaluating 11,785 websites through 14 quality assessment tools were assessed. Using DISCERN, quality ratings of websites were- 0% excellent, 37-79% good and the rest poor. Only 18% of websites were HON Code certified. Quality varied by affiliation (in decreasing order of- governmental, academic, followed by media sources) as well as specialty (with higher quality resources available for internal medicine and anaesthesiology). This review proves the unreliability and suboptimal quality of online health information for laypersons, and need for its improvement.

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NEUROSURGERY

ARTICLES

- [Blood pressure control and clinical outcomes in acute intracerebral haemorrhage: a preplanned pooled analysis of individual participant data](#)**
Tom J Moullaali, Xia Wang, René H Martin, Virginia B Shipes, Thompson G Robinson, John Chalmers, Jose I Suarez et. al
Lancet Neurol. 2019 Sep; 18(9):857-864
PMID:31397290

Uncertainty persists over the effects of blood pressure (BP) lowering in acute intracerebral haemorrhage (ICH). Individual patient-level data from the 2 largest randomised controlled trials of BP-lowering strategies in patients with acute ICH (INTERACT2 and ATACH-II) were combined to determine the strength of the association between key measures of BP control and safety and efficacy outcomes. Pooled analyses indicate that achieving early and stable systolic BP appears to be safe and associated with favourable outcomes in patients with acute ICH of mild-to-moderate severity.
- [Safety and Efficacy of Dabigatran Exetilate vs Dose-Adjusted Warfarin in Patients With Cerebral Venous Thrombosis: A Randomized Clinical Trial](#)**
José M. Ferro, Jonathan M. Coutinho, Francesco Dentali, Adam Kobayashi, Andrey Alasheev, Patrícia Canhão et. al
JAMA Neurol. 2019 Sep 3. doi: 10.1001/jamaneurol.2019.2764.
PMID:31479105

Cerebral venous thrombosis (CVT) is due to dural sinus and/or cerebral vein thrombosis. Survivors are at increased risk of similar and other venous thrombotic events (VTE), hence requiring anti-coagulation therapy. This randomised, controlled, multicentre, clinical trial of 120 patients compared the safety and efficacy of vitamin K-antagonist (dabigatran exetilate) with that of dose-adjusted warfarin in patients with CVT. The trial found patients with CVT anticoagulated with either agent had low risk of recurrent VTEs and similar bleed risk-suggesting the 2 therapies may both be safe and effective in preventing recurrent VTEs in patients with CVT.



- 3 [Changes in cerebral metabolism during ketogenic diet in patients with primary brain tumors: ¹H-MRS study](#)
Artzi M, Liberman G, Vaisman N, Bokstein F, Vitinshtein F, Aizenstein O, Ben Bashat D
J Neurooncol. 2017 Apr;132(2):267-275.
PMID: 28074323
- Normal brain cells metabolise glucose yet can switch to use of ketone bodies during caloric restriction, unlike tumour cells which lack this metabolic flexibility and are largely glucose-dependent. As such, the ketogenic diet (KD) has been suggested as a therapeutic option for malignant brain cancer. In this study, metabolic brain changes were detected through proton Magnetic Resonance Spectroscopy (¹H-MRS), in patients with malignant brain gliomas on KD. It remains unclear whether ketone body accumulation in the brain was due to increased uptake or decreased utilisation.
- 4 [Comparison of Motor Outcome in Patients Undergoing Awake vs General Anesthesia Surgery for Brain Tumors Located Within or Adjacent to the Motor Pathways](#)
Roni Zelitzki, Akiva Korn, Eti Arial, Carmit Ben-Harosh, Zvi Ram, Rachel Grossman
Neurosurgery. 2019 Sep 1;85(3):E470-E476
PMID: 30783667
- Surgical removal of intra-axial brain tumours aims for maximal tumour resection whilst preserving function. This retrospective study of 1126 patients compared the clinical outcomes of patients undergoing surgery for peritumoral tumours, so as to identify potential benefits of awake craniotomy over craniotomy under general anaesthesia (GA). Results indicated that patients who underwent GA were found to require higher motor cortex stimulation thresholds (possibly suggesting an inhibitory effect of anaesthetic agents on motor function), more likely to have postoperative motor deficits and have a longer mean length of hospitalisation.
- 5 [Hearing Response Following Internal Auditory Canal Decompression in Neurofibromatosis Type 2.](#)
Bonne NX, Risoud M, Hoa M, Lemesre PE, Aboukais R, Le Rhun E, Dubrulle F, Baroncini M, Lejeune JP et. al
Neurosurgery. 2019 Sep 1;85(3):E560-E567.
PMID: 30888036
- Hearing response following an osteodural decompression of the internal auditory canal (IAC) is controversial. This retrospective chart review of middle fossa craniotomy for IAC osteodural decompression in NF2-related vestibular schwannomas reveals that IAC decompression allows early, objective hearing responses in select patients. It is suggested that the procedure be offered to patients with hearing progression, based on their SDSs and/or associated progressive increases in their wave III and V latencies on ABRs.



6

[Neuroimaging in Juvenile Alexander Disease: Tumour-like Brainstem Lesions.](#)

Tan AP, Sahil C, Robinson R, Siddiqui A, Wraige E, Chandler C, Mankad K.

Ann Acad Med Singapore. 2018 May;47(5):191-193.

PMID: 29911736

Alexander Disease (AD) is a progressive degenerative leukodystrophy typically presenting in infancy. This is a case report of a 7-year-old boy with history of motor developmental delay and progressive lower limb weakness for which no known cause had been found. He was referred to the neuro-oncology unit for a presumed tumour in the dorsal medulla oblongata noted on MRI. AD presenting as an isolated lesion is rare and differential diagnoses include other focal tumours (e.g. gliomas), infections and demyelinating disorders. Consideration of metabolic diseases when focal tumour-like brainstem lesions are seen is important to ensure appropriate genetic testing (98% of AD cases are associated with GFAP gene coding region mutations) and avoid invasive investigations such as brainstem biopsy which carry significant morbidity.

7

[Changing concepts in presurgical assessment for epilepsy surgery](#)

Maeike Zijlmans, Willemieke Zweiphenning, Nicole van Klink

Nat Rev Neurol. 2019 Jul 24

PMID: 31341275

Presurgical evaluation of candidates for epilepsy surgery is crucial for determining whether and how surgical treatment can stop seizures, while avoiding neurological deficits. These include MRI, PET and invasive EEG, which identify diseased brain tissue and the involved network. The resultant pre-operative interpretation aids patient counselling and surgical planning, while intraoperative guidance likely increases surgical precision. This review discusses how knowledge derived from these new approaches is challenging the perception of focal epilepsy surgical treatment. It highlights the importance of looking beyond EEG seizure-onset zone, considering focal epilepsy as a brain network disease where long-range connections must be taken into account, and exploring how new diagnostic techniques are revealing key information once hidden from view, about the brain.

8

[Recent advances in the management of cervical spondylotic myelopathy: bibliometric analysis and surgical perspectives](#)

Chen YC, Kuo CH, Cheng CM, Wu JC.

J Neurosurg Spine. 2019 Sep 1;31(3):299-309.

PMID: 31473666

Cervical spondylotic myelopathy (CSM) has become a prevalent cause of spinal cord dysfunction, but the optimal timing and surgical strategy to treat it remains controversial. This article analyses the current trends in CSM studies and summarises recent advances in surgical techniques used in its treatment. Bibliometric and content analyses of 1008 papers published over 44 years (1975 to 2018) was performed, noting an exponential growth in surgical series publishing with a slight trend toward an anterior approach in the last decade. Due to the increased risks of neurological deterioration and spinal cord injury with non-operative management, the literature is evolving toward early surgical intervention.



9 [Cervical disc arthroplasty: 10-year outcomes of the Prestige LP cervical disc at a single level](#)

Gornet MF, Burkus JK, Shaffrey ME, Schranck FW, Copay AG.

J Neurosurg Spine. 2019 May 10:1-9.

PMID: 31075769

FDA-approved investigational device exemption (IDE) studies have provided level I evidence supporting cervical disc arthroplasty (CDA) as a safe and effective alternative to anterior cervical discectomy and fusion (ACDF), but long-term CDA outcomes are still being evaluated. This study of outcomes 10-years post-surgery, used a primary endpoint of overall success as measured by a composite variable consisting of 5 criteria as well as other measures of safety and efficacy. Results showed that CDA was safe and effective out to 10 years post-surgery, with patient satisfaction at >90% at 10 years.

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