



Abstracts

Articles appearing in the January 2018 issue

Decreased occipital lobe metabolism by FDG-PET/CT: An anti-NMDA receptor encephalitis biomarker

Objective To compare brain metabolism patterns on FDG-PET/CT in anti-NMDA receptor (NMDAR) and other definite autoimmune encephalitides (AE) and assess how these patterns differ between anti-NMDAR neurologic disability groups.

Methods Retrospective review of clinical data and initial dedicated brain FDG-PET/CT studies for neurology inpatients with definite AE, per published consensus criteria, treated at a single academic medical center over a 10-year period. z-Score maps of FDG-PET/CT scans were made using 3D stereotactic surface projections with comparison to age group matched controls. Brain region mean z-scores with magnitudes ≥ 2.00 were interpreted as significant. Comparisons were made between anti-NMDAR and other definite AE patients as well as among anti-NMDAR patients based on modified Rankin Scale scores (mRS) at time of FDG-PET/CT.

Results The medial occipital lobes were markedly hypometabolic in 6 of 8 anti-NMDAR patients and as a group ($z = -4.02$, interquartile range [IQR] 2.14) relative to those with definite AE ($z = -2.32$, 1.46; $p = 0.004$). Among anti-NMDAR patients, the lateral and medial occipital lobes were markedly hypometabolic for patients with mRS 4–5 (lateral occipital lobe $z = -3.69$, IQR 1; medial occipital lobe $z = -4.08$, 1) compared to those with mRS 0–3 (lateral occipital lobe $z = -0.83$, 2, $p < 0.0005$; medial occipital lobe $z = -1.07$, 2; $p = 0.001$).

Conclusions Marked medial occipital lobe hypometabolism by dedicated brain FDG-PET/CT may serve as an early biomarker for discriminating anti-NMDAR encephalitis from other AE. Resolution of lateral and medial occipital hypometabolism may correlate with improved neurologic status in anti-NMDAR encephalitis.

NPub.org/N2/9007a

Safety and preliminary efficacy of deep transcranial magnetic stimulation in MS-related fatigue

Objective Randomized, sham-controlled phase I/IIa study investigating the safety and preliminary efficacy of deep brain H-coil repetitive transcranial magnetic stimulation (rTMS) over the prefrontal cortex (PFC) and the primary motor cortex (MC) in patients with multiple sclerosis (MS) with fatigue or depression (NCT01106365).

Methods Thirty-three patients with MS were recruited to undergo 18 consecutive rTMS sessions over 6 weeks, followed by follow-up assessments over 6 weeks. Patients were randomized to receive high-frequency stimulation of the left PFC, MC, or sham stimulation. Primary endpoint was the safety of stimulation. Preliminary efficacy was assessed based on changes in Fatigue Severity Scale (FSS) and Beck Depression Inventory scores. Randomization allowed analysis of preliminary efficacy for fatigue, only.

Results No serious adverse events were observed. Five patients terminated participation during treatment due to mild side effects. Treatment resulted in a significant median FSS decrease of 1.0 point (95% confidence interval [0.45–1.65]), which was sustained during follow-up.

Conclusion H-coil rTMS is safe and well-tolerated in patients with MS. The observed sustained reduction in fatigue after sub-threshold motor cortex stimulation warrants further investigation.

Classification of evidence This study provides Class III evidence that rTMS of the prefrontal or primary motor cortex is not associated with serious adverse effects, although the study is underpowered to state this with any precision.

NPub.org/N2/9007b



Most-Read Articles

As of February 23, 2018

Treatment of spontaneous EAE by laquinimod reduces Tfh, B cell aggregates, and disease progression

M. Varrin-Doyer, K.L. Pekarek, C.M. Spencer, et al. 2016;5:e272. doi.org/10.1212/NXI.0000000000000272

Normal volumes and microstructural integrity of deep gray matter structures in AQP4+ NMOSD

C. Finke, J. Heine, F. Pache, et al. 2016;3:e229. doi.org/10.1212/NXI.0000000000000229

CSF isoprostane levels are a biomarker of oxidative stress in multiple sclerosis

F. Mir, D. Lee, H. Ray, and S.A. Sadiq. 2014;1:e21. doi.org/10.1212/NXI.0000000000000021

NMDA receptor antibodies associated with distinct white matter syndromes

Y. Hacohen, M. Absoud, C. Hemingway, et al. 2014;1:e2. doi.org/10.1212/NXI.0000000000000002

Neurology[®]

What's happening in *Neurology*[®] *Neuroimmunology & Neuroinflammation*
Neurology 2018;90;924
DOI 10.1212/WNL.0000000000005536

This information is current as of May 14, 2018

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/90/20/924.full
Citations	This article has been cited by 1 HighWire-hosted articles: http://n.neurology.org/content/90/20/924.full##otherarticles
Permissions & Licensing	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: http://www.neurology.org/about/about_the_journal#permissions
Reprints	Information about ordering reprints can be found online: http://n.neurology.org/subscribers/advertise

Neurology[®] is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2018 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

