Seizure frequency was compared to the baseline at 6 months, 12 were followed at CHU Sainte-Justine and 21 kept seizure diaries. The aim of our study was to evaluate the impact of a vagal nerve stimulation in patients with refractory epilepsy. The long-term outcome of children with refractory epilepsies over five years of follow-up. Methods: 52 patients were implanted between 2000-2013. Of these, 37 were followed at CHU Sainte-Justine and 21 kept seizure diaries. Seizure frequency was compared to the baseline at 6 months, 12 months, 24 months and 60 months of follow up using a multivariate ANOVA analysis. The hospitalization rate was calculated as the mean difference between the number of hospitalizations prior to and after the implantation. Results: Seizure frequency decreased by 58% at 6 months, by 61% at 12 months, by 53% at 24 months and by 63% at 60 months of follow up respectively compared to the baseline (p < 0.001). The hospitalization rate decreased by 50.87% after surgery (p < 0.001). Conclusion: In our population, vagal nerve stimulation has a sustained impact on seizure frequency and hospitalization rates. This supports previous data from our group and others on cost-effectiveness of the technique in children with refractory epilepsy.

Increased focal and diffuse cerebral demand after concussion

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do: 10.1017/cjn.2015.63

Aim: To examine cortical activation during a memory task in children with and without post-concussion symptoms (PCS) following concussion. Methods: A case-controlled study within the PlayGame Trial (www.playgametrial.ca). Children aged 8-18 years with PCS at 1-month post-injury were eligible. The fMRI task was a working memory task. Pre-processing and single-subject analysis were performed in FSL. Group activation and inter-group difference maps were extracted. Results: 11 symptomatic, 12 asymptomatic, and 11 controls without concussion participated. Groups were similar in age (14.9, 14.0, and 13.8yrs; p=0.46), sex (p=0.984) and time post-injury (symptomatic: 37d; asymptomatic 35d; p=0.573). Compared with controls, symptomatic children demonstrated greater activation especially in the bilateral orbito-frontal cortex and cerebellum. A similar, less pronounced pattern was observed in asymptomatic subjects. Conclusions: Similar to adult studies, increased network activation may represent decreased “efficiency” and explain the cognitive fatigue in PCS. Further, children who are “asymptomatic” may not yet be fully recovered.

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Neonatal hemorrhagic stroke: population-based epidemiology

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do: 10.1017/cjn.2015.64

Background: Stroke is a leading cause of perinatal brain injury and cerebral palsy. Term neonatal hemorrhagic stroke (NHS) is a common syndrome with poorly defined epidemiology. We aimed to determine incidence and mechanisms within a large population-based NHS sample. Methods: The Alberta Perinatal Stroke Project (APSP), a provincial registry ascertained NHS cases using exhaustive ICD-9/10 code searching (1992-2012, >2400 chart reviews). Prospective cases were captured through the Calgary Pediatric Stroke Program from 2007-2014 (n=387). All NHS cases underwent structured chart review using a data capture form and blinded review