

moderate length-dependent polyneuropathy of axonal type. Detailed blood screening studies were negative. Genetic testing revealed the diagnosis of nail-patella syndrome with LMX1B gene mutation on chromosome 9q34. The lack of an identifiable acquired cause and the symmetric, slowly progressive and “painless” nature of the patient’s peripheral neuropathy point toward an inherited etiology. *Conclusion:* We present a case of slowly progressive sensorimotor axonal polyneuropathy in a patient with a diagnosis of NPS, which has not been previously reported. Peripheral nervous system disorder may be a variable phenotypic manifestation of LMX1B gene mutation.

NEUROPHYSIOLOGY (fMRI)

P.063

Identification of resting state networks using independent component analysis in patients with brain tumors

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Background: Resting state functional MRI (rs-fMRI) provides many advantages to task-based fMRI in neurosurgical populations, foremost of which is the lack of the need to perform a task. Many networks can be identified by rs-fMRI in a single period of scanning. Despite the advantages, there is a paucity of literature on rs-fMRI in neurosurgical populations. *Methods:* Eight patients with tumours near areas traditionally considered as eloquent cortex participated in a five minute rs-fMRI scan. Resting-state fMRI data underwent Independent Component Analysis (ICA) using the Multivariate Exploratory Linear Optimized Decomposition into Independent Components (MELODIC) toolbox in FSL. Resting state networks (RSNs) were identified on a visual basis. *Results:* Several RSNs, including language (N=7), sensorimotor (N=7), visual (N=7), default mode network (N=8) and frontoparietal attentional control (n=7) networks were readily identifiable using ICA of rs-fMRI data. *Conclusion:* These pilot data suggest that ICA applied to rs-fMRI data can be used to identify motor and language networks in patients with brain tumours. We have also shown that RSNs associated with cognitive functioning, including the default mode network and the frontoparietal attentional control network can be identified in individual subjects with brain tumours. While preliminary, this suggests that rs-fMRI may be used pre-operatively to localize areas of cortex important for higher order cognitive functioning.

NEUROSURGERY (CRITICAL CARE/NEURO TRAUMA)

P.065

“Novell” medical therapies in ICP management: targeting three brain states

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Background: There exists the role for novel agents in the management of refractory intracranial pressure (ICP) via targeting cerebral acidosis, hyperemia, and excitotoxicity. *Objective:* We performed 4 separate systematic reviews to determine the effect of tromethamine (THAM), indomethacin, and ketamine on ICP. *Methods:* All articles from MEDLINE, BIOSIS, EMBASE, Global Health, HealthStar, Scopus, Cochrane Library, the International Clinical Trials Registry Platform (inception to: February 2014 – THAM, July 2014 – Indomethacin, November 2013 - Ketamine), and gray literature were searched. The strength of evidence was adjudicated using both the Oxford and GRADE methodology. *Results:* Twelve articles were reviewed utilizing THAM while documenting ICP in neurosurgical patients. All but one study documented a decrease in ICP. Twelve original articles were reviewed utilizing indomethacin for ICP in neurological patients. All but one study documented a decrease in ICP. Seven articles were reviewed utilizing ketamine, documenting ICP in TBI patients, with 16 in non-trauma neurological patients. ICP did not increase in the studies during ketamine administration, and trended to decrease ICP. *Conclusion:* There exists Oxford level 2b, GRADE B evidence that THAM reduces ICP in the TBI and malignant ischemic infarct population. There exists Oxford level 2b, GRADE C evidence that indomethacin and ketamine reduce ICP in the adult severe TBI population.

P.067

The effectiveness of a concussion-u educational presentation on knowledge and attitudes of concussion amongst elite bantam and midget hockey players

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Background: The diagnosis of a concussion is often dependent on the athlete self-reporting their symptoms. It has been suggested that improving athlete’s knowledge and attitudes towards concussions may increase self-reporting behavior; however, research in this area is inconclusive. The objective of this study is to determine if a Concussion-U educational presentation improves knowledge and attitudes of youth hockey players towards concussions. This is part of a larger study designed to determine the impact of an informational presentation on the knowledge and attitudes over a full hockey season. *Methods:* 56 elite male Bantam and Midget hockey players (mean age = 14.52 ± 1.13 years) were recruited from the local community. Each participant completed a modified version of Rosenbaum and Arnett’s Concussion Knowledge and Attitudes Survey