neuronal populations, protein aggregation, insidious adult onset, and chronic progression. Modeling these diseases in animal models is useful for studying the relationship between neuronal dysfunction and abnormal behaviours and for screening therapies. Methods: We conducted a comprehensive descriptive review of the numerous animal models currently available to study these three diseases with a focus on their utilities and limitations. Results: A vast range of genetic and toxin-induced models have been generated. Our review outlines how these models differ with regards to the genetic manipulation or toxin used and the brain regions lesioned, describes the extent to which they mimic the neuropathological and behavioral deficits seen in the human conditions, and discusses the advantages and drawbacks of each model. Conclusions: We recommend the adoption of a conservative approach when extrapolating findings based on a single animal model and the validation of findings using multiple models. Investing in additional preclinical studies before embarking on more expensive human trials will improve our understanding of the neuropathology underlying neuronal demise and enhance the chances of identifying effective therapies.

P.095

Smoking behaviour change is associated with altered functional brain connectivity in older adults

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Background: Smoking is the leading cause of preventable morbidity worldwide and therefore developing effective smoking cessation strategies is a public health priority. However, what brain networks support maintenance of smoking cessation in the long term remains unexplored. Methods: We analyzed the baseline resting-state fMRI data acquired in 23 smokers (M_{age} = 61.52 ± 3.7) who were followed longitudinally in a cohort of cognitively normal older adults. Self-reported smoking status and amount were recorded at baseline and repeated after 4 years. We investigated the effect of smoking behaviour change on functional brain connectivity using seed-to-voxel approach. We examined a-priori regions of interest (ROIs) including the reward network (ventromedial prefrontal cortex (vMPFC) and ventral striatum) and the right insula. These ROIs are promising target mechanisms given prior behavioural research linking it to smoking cessation. Results: Our results revealed that reduced smoking was associated with reduced connectivity between ventral striatum and middle frontal gyrus and enhanced connectivity between right insula and middle temporal gyrus (voxel $p < 0.001$, cluster $p < 0.05$ FDR corrected). However, change in smoking did not reveal any significant effects in the vMPFC. Conclusions: Our findings suggest that successful smoking behaviour change is associated with altered reward network and insular functional connectivity in the long term.

Epilepsy and EEG

P.096

Bi-insular responsive neurostimulation artifact on scalp electroencephalogram

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Background: Responsive Neurostimulation (RNS) has proven efficacy in the treatment of medically resistant epilepsy as an intracranial system that detects, records and treats seizures automatically. No information exists pertaining to artifact characteristics of RNS findings in scalp EEG. Methods: A 30 year-old female was diagnosed, using intracranial electroencephalography (iEEG), with refractory bi-insular epilepsy, of unknown cause. Due to her large number of focal unaware non-motor seizures and frequent seizures with progression to bilateral tonic-clonic, she was implanted with bi-insular Responsive Neurostimulation (RNS). Results: Results: During scalp EEG recordings, a prominent artifact was seen corresponding to an automatized discharge suspectedly evoked by the RNS trying to minimize the frequent epileptiform activity in her case. Figure 1 and 2 depict these findings. Conclusions: The artifact seen by the RNS in scalp EEG has not been previously described in scientific literature. These findings must be identified to better characterize the role of the RNS in EEG and treatment of seizure activity visible on scalp recordings.

P.097

After-discharges and presurgical cortical stimulation in stereo-encephalography in the study of drug-resistant epilepsy

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Background: Background: Cortical stimulation (CS) as a part of presurgical investigations in patients undergoing implantation of depth electrodes (SEEG) is a growing practice in some Comprehensive Epilepsy Centers. After-discharges (AD) are useful to determine epileptogenic tissue within or outside the epileptogenic network. Classification of afterdischarges was proposed by Blume using subdural recordings(1); its utility in SEEG is unknown. Methods: Methods: Single center, retrospective study that included patients with SEEG that underwent CS in the Epilepsy Monitoring Unit. Demographic characteristics were explored and Blume's proposed AD classification was used to determine whether or not the CS changed surgical outcomes. Results: Results: From January 2015 to June 2021, a total of 177 patients were implanted with SEEG and analyzed. 95 patients had CS and 91 had AD. Morphologies found were: Rhythmic waves

in 4 (0.04%), Rhythmic waves evolving into spikes in18 (19%), Polyspike bursts in 14 (15%), Spike-waves in 28 (30%), and sequential spikes in 18 (19%). 12/14 (86%) patients with Spike-waves had Engel I outcome; Engel class IV patients were more likely to have an evolution of morphology and frequency of ADs in 3 patients(75%). Conclusions: Conclusions: The most frequent morphology of ADs seen was spike-waves. AD morphology and duration may predict post-operative seizure outcomes.

P.098

Usefulness of language mapping during cortical stimulation for presurgical planning in Stereo-encephalograph

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Background: Background: Language determination is a pivotal part of presurgical investigations. Presurgical cortical stimulation (CS) with language mapping (LM) in patients with intracranial recordings (SEEG) is a growing practice in some Comprehensive Epilepsy Centers. Methods: Methods: This retrospective, single center study included patients implanted with SEEG that underwent CS for LM in our Epilepsy Monitoring Unit. We describe frequencies, demographic characteristics of these patients and whether or not CS with LM was useful. Results: Results: From January 2015 to June2021, a total of 177 patients were implanted with SEEG and analyzed. 95 patients had CS and 44 of these had CS with LM. The mean age was 33 (ranging from 15-70). During LM, anomia was induced in 26 (58%), speech arrest in 22 (49%), paraphasic errors in 13 (29%), and hesitation in 9 (20%). LM results were recorded as influencing surgical decision in 7 (16%) patients, 4 (9%) did not undergo surgery due to expected language deficits and 3 (7%) proceeded with surgery due to an acceptable risk of language deficit. Conclusions: Conclusions: Cortical stimulation language mapping is useful for decision-making in presurgical evaluation and should be encouraged whenever involvement of language is suspected when determining the epileptogenic zone.

Movement Disorders

P.099

Spasticity treatment patterns in long-term care using Ontario real-world evidence

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Background: Focal spasticity affects up to 1 in 3 residents in long-term care (LTC), with potentially disabling consequences. Data are limited on access to care for patients requiring botulinum toxin (BoNT) treatment in LTC. Methods: This retrospective, observational, real-world study was conducted using the Ontario Drug Benefit claims database. Patients with ≥1 medical claim for BoNT for focal spasticity treatment were selected, and those residing in LTC were further identified. Data were analyzed for the utilization (2000–2019), treatment rate, and time-to-treatment with BoNT in LTC residents (2015–2019). Results: Over a 10-year period, the number of patients receiving BoNT for spasticity increased 7-fold and the proportion of patients residing in LTC versus community increased from 43% (2010) to 52% (2019). Of the LTC residents eligible for BoNT treatment, 33% received BoNT in 2015 compared with 63% in 2019. Injections/patient/year increased from 1.9 (2010) to 3.1 (2017). Following LTC admission, median time to first injection was 2.9 years. Conclusions: In this study, approximately 40% of eligible LTC residents in Ontario were not receiving BoNT treatment, and of those who were, median time to first injection was 2.9 years. Future policy considerations should prioritize uniform access to spasticity standards of care for LTC residents.

Neurocritical Care

P.100

Early recognition of unique conventional and amplitude-integrated EEG patterns and clinical semiology of neonatal seizures caused by SCN2A and KCNQ3 mutations

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Background: Early recognition of neonatal seizures secondary to pathogenic variants in potassium or sodium channel coding genes is crucial, as these seizures are often resistant to commonly used anti-seizure medications, but respond well to sodium-channel blockers. We report a unique aEEG pattern in neonatal seizures caused by *SCN2A* and *KCNQ3* pathogenic variants, as well as adding regular EEG description. Methods: International multicentre descriptive study, reporting clinical characteristics, aEEG and conventional EEG findings of 10 newborns with seizures due to pathogenic *SCN2A* and *KCNQ3* gene variants. Results: Seizures started in the first postnatal week. Seizure semiology typically included tonic posturing with apnea and desaturation. The aEEG showed a characteristic sequence of brief onset with a decrease, followed by a quick rise, and then postictal amplitude attenuation. This pattern correlated with bilateral attenuation in the EEG at onset, followed by rhythmic discharges ending in several seconds of post-ictal amplitude suppression. The majority of patients became seizure free upon initiation of a sodium-channel blocker. Conclusions: Neonatal seizures caused by *SCN2A* and *KCNQ3* mutations can be recognized by a characteristic ictal aEEG pattern and clinical semiology. Awareness of this pattern facilitates the prompt initiation of precision treatment with sodium-channel blockers even before genetic test results are available.