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Experiences with epilepsy treatments: a qualitative content analysis of online patient support group discussions

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Background: To promote patient-centred care in epilepsy, it is essential to understand the issues most important to patients. Literature on patient perceptions of epilepsy treatments is sparse. One source of data is online patient support groups. Patients turn to social media for support from other patients and often express viewpoints not shared with healthcare providers. *Methods:* Using a qualitative content analysis approach, we analyzed major online epilepsy patient support groups. We initially selected a month-long discussion text across these forums, and further threads were sampled with maximum variation until theme saturation was reached. For data coding and analysis, we employed a combination of a priori codes and emergent codes, using NVivo 11 for data analysis. *Results:* In our preliminary analysis, we identified topics and categorized them into themes: 1) differential perceptions and understandings of epilepsy; (2) understanding treatment options; (3) experiences of physiological and psychological treatment side effects; (4) concerns about healthcare providers' knowledge and communication regarding treatments. *Conclusions:* Preliminary results indicate a variety of patient perceptions and understandings of epilepsy and its treatments. Our findings also suggest that patient educational needs should be addressed by incorporating their understanding and concerns. Shared-decision making tools informed by patient perceptions could help healthcare providers better communicate treatment options with patients.

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Focal cortical dysplasia type IIIb associated with oligodendroglioma in a seizure free patient: a case report

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Background: Focal cortical dysplasia (FCD) refers to malformation of cortical development featuring abnormalities of cortical layering, neuronal differentiation and maturation. It is a common cause of medically refractory epilepsy. The coexistence of FCD and low-grade glial neoplasms such as ganglioglioma and dysembryoplastic neuroepithelial tumour is classified by the International League Against Epilepsy as "FCD Type IIIb". We present a case of FCD Type IIIb associated with low grade oligodendroglioma (WHO grade II) in a seizure free patient. *Methods:* A 20-year-old male presented with suspected arteriovenous malformation of the right pinna. Imaging revealed an incidental right frontal lobe mass. Surgical resection was performed. Pathologic analysis revealed FCD Type IIIb associated with low grade oligodendroglioma (WHO grade II). *Results:* The patient recovered uneventfully. Only 4 prior cases of FCD Type IIIb associated with oligodendroglioma have been reported. This is the first reported case of FCD Type IIIb discovered incidentally in a seizure free patient. *Conclusions:* FCD Type IIIb associated with oligodendroglioma is rare. The mechanism(s) by which glioneuronal neoplasms and perilesional cortical tissue jointly contribute to epileptogenicity have not been clearly defined. There may be a reduced risk of seizures with oligodendroglioma rather than tumors with a neuronal component.

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Correlation of thalamic connectivity with the duration of epilepsy in patients with temporal lobe epilepsy

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Background: Morphometry and connectivity studies targeting the thalamus have revealed specific patterns of atrophy and deafferentiation in patients with temporal lobe epilepsy (TLE). We used probabilistic tractography to investigate thalamic connectivity with respect to duration of epilepsy and surgical outcomes in TLE. *Methods:* Patients (N=20) with drug-resistant TLE (10 short duration (<15 years), 10 long duration (>15 years)) were scanned with multi-parametric 3T MRI and compared with 34 healthy controls. The Harvard-Oxford atlas was modified to create 14 target regions in the temporal lobes. Probabilistic tractography (FSL) was used to delineate thalamic subregions most connected to each target. The volume, mean T1, T2, FA and MD of each thalamic sub-region was quantified. Surgical success was quantified using Engel outcome scores. *Results:* Significant decreases in thalamic connected volumes to the hippocampus in patients with longer duration of TLE were revealed. Likewise, when stratified based on surgical success, significant differences in diffusion metrics to the hippocampus, parahippocampal gyrus, and temporal neocortex were found. Significant differences did not withstand false discovery rate (FDR) correction. *Conclusions:* These findings suggest ongoing connectivity changes dependent on epilepsy duration and promote further investigation into the use of thalamic connectivity data as biomarkers for predicting surgical outcomes in TLE patients.

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Targeted molecular therapy with quinidine for seizures in a neonate with KCNT1 mutation leads to poor response

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Background: The KCNT1 gene encodes subunits of the Na+-activated K+ channel, widely expressed in the CNS. Mutations of this gene have been implicated in Malignant Migrating Partial Seizures of Infancy (MMPSI). This early-onset epileptic encephalopathy represents a challenge due to pharmacoresistance. The channel-specific mutation represents the potential for targeted pharmacotherapy. Quinidine is a partial antagonist of the KCNT1 encoded channel; patients with MMPSI have been reported to have responded to doses ranging 34.4/kg/d - 60mg/kg/d. We present a case of MMPSI with a KCNTI mutation (c.G1283A:p.R428Q) trialled on quinidine. *Methods:* Following ineffective trials of 6 anti-seizure medications, this patient was trialled on oral quinidine. This patient was titrated up to a dose of 52mg/kg/d. Twenty-four hour EEG monitoring prior to quinidine therapy, and at target dose were compared. *Results:* Prior