change from baseline in NSAA total score to Week 52. Results: At Week 52 (n=125), the primary endpoint did not reach statistical significance, although there was a nominal difference in change from baseline in NSAA total score in the delandistrogene moxeparvovec (2.6, n=63) versus placebo groups (1.9, n=61). Key secondary endpoints (time to rise, micro-dystrophin expression, 10-meter walk/run) demonstrated treatment benefit in both age groups (4-5 and 6-7 years; $p<0.05$). There were no new safety signals, reinforcing the favorable and manageable safety profile observed to date. Conclusions: Based on the totality of functional assessments including the timed function tests, treatment with delandistrogene moxeparvovec indicates beneficial modification of disease trajectory.

D.5

Low density scalp electrical source imaging of the ictal onset zone network using source coherence maps

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Background: This study investigates the utility of low-density scalp electrical source imaging (LD-ESI) of the Ictal Onset Zone (IOZ) and interictal spike ripple high frequency oscillation (ISRHFO) networks using Source Coherence Maps (SCM) in the surgical evaluation of children with medically refractory epilepsy. Invasive intracranial monitoring, the gold standard for determining epileptogenic zones, has limited spatial sampling. SCM presents a promising new non-invasive diagnostic technique. Methods: This was a retrospective review of 11 patients who underwent focal resections. SCMs were generated using Standardized Low Resolution Electromagnetic Tomography (sLORETA). SCM concordance to resection margins was assessed, noting outcomes at 3 years. Results: For 7/11 cases, ictal SCMs included the resection, and 5/7 achieved seizure freedom, indicating inclusion of the epileptogenic zone. For the 2/7 not seizure-free, the IOZ networks on the SCMs extended beyond resection margins, suggesting the epileptogenic zone also extended beyond the resection. Interictal spike ripple ESI and ISRHFO SCM were performed for 7/11, with 3/7 included in the resection and all 3 seizure-free. Conclusions: These findings may support LD-ESI of the IOZ and ISRHFO network using SCM as promising methods complementary to ictal and interictal ESI in pediatric epilepsy surgical workup, guiding electrode placement for intracranial monitoring to identify the epileptogenic zone.

D.6

Neurological care and outcomes of pregnant patients with epilepsy in a Canadian tertiary care center (2014-2020)

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Background: Limited data exists on neurological care and outcomes of Canadian pregnant patients with epilepsy (PPWE). This study provides Canadian data to inform practice patterns and observed outcomes for PPWE at a tertiary care center. Methods: PPWE receiving care at the University Health Network (Toronto, Canada) epilepsy clinic from January 1, 2014 to November 20 2020 were retrospectively identified with demographics and neurological data and outcomes collected. Results: A total of 195 cases were identified, with a median maternal age of 32 years (SD 4.58), a median age at first seizure of 17 years (range 1 month – 36 years old), 52% were diagnosed with genetic generalized epilepsy and 50% endorsed 6 months of seizure freedom prior to conception. In pregnancy, 93% took ASM(s) with 77% receiving therapeutic drug monitoring (TDM) and drug dose adjustments reported in 69%. Most cases (73%) maintained a stable seizure frequency. Conclusions: This study provides new Canadian data on PPWE at a tertiary care center. PPWE are overall well controlled, more likely to have young adult onset, genetic generalized epilepsy with nearly all taking ASM(s) during pregnancy. While high rates of TDM and drug dose adjustments were observed, most experienced seizure stability in pregnancy.

Neuroradiology (CSNR)

E.1

Focal leptomeningeal vascular anomalies on brain MRI: a mimic of leptomeningeal metastatic disease

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Background: The diagnosis of leptomeningeal metastatic disease has major prognostic implications. We report 13 patients with a radiologically distinct, focal, enhancing leptomeningeal lesion on brain MRI mimicking leptomeningeal metastatic disease. Methods: These patients were assessed at University Health Network between January 2001 and December 2023. Results: Median age was 68 years and 10 patients were women. All patients had brain MRI including contrast-enhanced T2-weighted FLAIR and T1-weighted spin echo sequences. MRI in all patients showed a focal enhancing lesion along the leptomeningeal surface of the brain. The MRI exams were reported as possible metastatic disease for the majority (9/13) of patients. Each lesion was curvilinear rather than sheet-like, and some consisted of multiple connected/branching curvilinear structures with the appearance of abnormal vessels. Some lesions had visible connection with a nearby cortical vein. The lesions were distinct from normal blood vessels. Follow-up contrast-enhanced brain MRI for 8/13 patients at a median of 3.9 years showed all lesions were unchanged over time. Conclusions: We describe a distinct kind of focal, enhancing leptomeningeal lesion on brain MRI that mimics metastatic disease. These lesions are likely a type of low-flow vascular anomaly. Their curvilinear/branching shape and intense enhancement particularly on T2-weighted FLAIR images distinguishes these lesions from tumor.

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