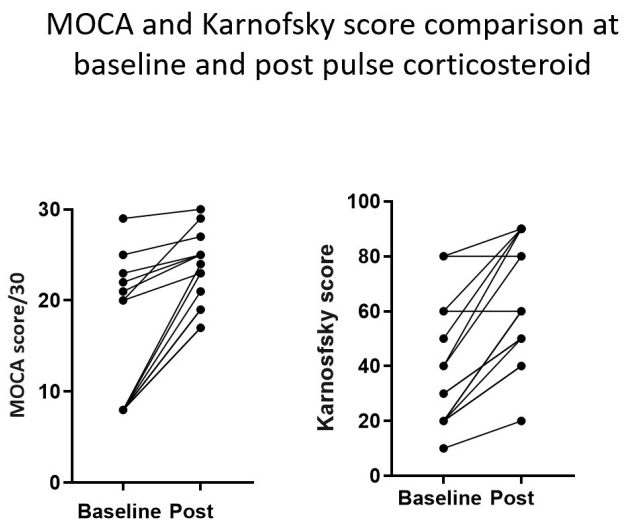
Papilledema (n=8) and visual field deficits (n=11) improved significantly (p< 0.0005) after 2 months of pulse completion. Brain MRI showed improvement of radiological findings in 11 patients (p=0.001). Five out of 7 patients who underwent audiological testing demonstrated hearing improvement after 3 weeks post-pulse. CSF cultures remained negative.



Conclusion: PCT in this small cohort of PIIRS patients was associated with persistent improvements in CM-related complications with minimal toxicity and no recurrence of infection.

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48. Clinical Characteristics of Acute Flaccid Myelitis Cases Associated with Enteroviruses D68 and A71 — United States, 2018

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Session: O-10. CNS Infections

Background: Acute flaccid myelitis (AFM) is an uncommon but serious condition that causes paralysis in previously healthy children. Multiple viruses can be associated with AFM. In 2018, enteroviruses D68 (EV-D68) and A71 (EV-A71) were the most common viruses detected among patients with confirmed AFM. We described and compared clinical characteristics of cases associated with EV-D68 and EV-A71.

Methods: Health departments report cases meeting AFM clinical criterion (acute onset of flaccid limb weakness) to the Centers for Disease Control and Prevention along with medical records. Confirmed AFM cases were patients who met clinical criterion and had magnetic resonance imaging (MRI) showing spinal cord lesions largely restricted to gray matter. We abstracted clinical data and laboratory results from records of confirmed case-patients with onset of limb weakness during 2018. EV-D68 and EV-A71 cases were compared using chi-square and Wilcoxan rank sum tests.

Results: Among 238 confirmed AFM cases, 34 had EV-D68 and 12 had EV-A71 detected in a respiratory, serum, stool, or cerebrospinal fluid specimen. Median age of EV-D68 and EV-A71 cases were 5.9 and 1.6 years, respectively (p< 0.01). EV-D68 cases came from 20 states, while 11/12 EV-A71 cases were from Colorado. Prodromal respiratory illness was more common among EV-D68 (97%) than EV-A71 cases (58%) (p< 0.01). Prodromal rash was more common among EV-A71 (58%) than EV-D68 cases (9%) (p< 0.01). At presentation, the most common symptoms accompanying limb weakness among EV-D68 cases were neck/back pain (59%), gait difficulty (56%), and fever (47%). Among EV-A71 cases, the most common symptoms were fever (67%), ataxia (67%), gait difficulty (50%), and altered consciousness (50%). EV-A71 cases were more likely to have ataxia, altered consciousness, and brainstem (92% vs. 45%) or cerebellar (75% vs. 9%) lesions on MRI (all p< 0.01). EV-D68 cases were more likely to require mechanical ventilation (44% vs. 8%, p 0.03).

Conclusion: These national data suggest that EV-D68 and EV-A71 are associated with overlapping but different clinical phenotypes. Differences in demographics, prodromal illness, symptoms, and brain MRI findings were identified. Additional research is needed to determine whether pathogenesis and optimal treatment also vary by virus type.

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49. Clinical Characteristics of the 2019 Eastern Equine Encephalitis Virus Outbreak in Michigan

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Session: O-10. CNS Infections

Background: Eastern Equine Encephalitis Virus (EEEV) is a mosquito-borne alphavirus responsible for unpredictable outbreaks of severe neurologic disease in humans. While the vast majority of human EEEV infections are either asymptomatic or clinically nonspecific, a minority of patients develops neuroinvasive disease (EEE), which is a devastating illness with a mortality of at least 30%. No treatments are known to be effective. EEEV infection is relatively rare in the United States, with an annual average nationwide incidence of 7 cases between 2009 and 2018. However, 2019 was an exceptionally active year for human EEEV disease, yielding 38 nationwide confirmed cases, including 10 in Michigan, comprising the state's largest outbreak to date.

Methods: EEE cases were identified by a regional network of physicians. Cases were defined by presentation with clinical symptoms of encephalitis, and by identification of EEEV IgM antibodies or RNA in cerebrospinal fluid (CSF), or EEEV-specific IgM in serum as confirmed by plaque reduction neutralization test. Radiographic images were evaluated and clinical data abstracted through chart review and clinical follow-up where possible.

Results: Records from 7 patients were identified and reviewed. The median age was 64, with a male predominance, and all presented in August. Notably, commercial arboviral CSF serology was uniformly negative on the initial CSF sample, and diagnosis was not made until a mean of 23 days (range: 12–38 days) after presentation. Testing in public health laboratories yielded the diagnosis in 5 out of 7 cases. Imaging findings were heterogeneous, but most patients exhibited abnormal findings in the thalamus and/or basal ganglia, and one patient displayed prominent pons and midbrain abnormalities. 4 patients died, while 2 patients survived with severe neurologic sequelae, and 1 patient recovered without sequelae. One patient underwent a limited postmortem examination, which revealed diffuse meningoencephalitis and focal vascular necrosis.

Conclusion: EEE is a frequently fatal condition whose diagnosis is often delayed, and for which no effective treatments are known. Improved diagnostics are needed to facilitate further clinical studies of EEE and encourage the development of potential therapies.

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50. Evaluation of Discordant Results Between Filmarray Meningitis/encephalitis Panel and Conventional Testing in Pediatric Patients: A Multi-site Retrospective Cohort Study

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Session: O-10. CNS Infections

Background: FilmArray Meningitis/Encephalitis Panel (ME panel) has a 11% false positive and 2.2% false negative rate compared to conventional testing. We aim to describe characteristics, treatment decisions and outcomes in pediatric patients with discordant results between ME panel and conventional testing.

Methods: We conducted a multisite (n=4) retrospective review of patients < 18 years with positive cerebrospinal fluid (CSF) results by ME panel or conventional testing (CSF culture, Herpes Simplex Virus [HSV] and enterovirus [EV] PCR) from time of local ME panel implementation to February 2019. We excluded CSF obtained for non-infectious reasons. Demographic and clinical data were extracted from electronic medical records. Comparison between concordant and discordant results were made using Mann-Whitney test for continuous and Fisher's exact test for categorical variables.