included EBV, neuroborreliosis, rubella, and Eastern Equine encephalitis. Eight (22%) had a positive result on CSF mNGS; 7 were clinically significant including change in management in 5 of 8 (63%) patients.

Conclusion: In this cohort of pediatric patients who underwent CSF mNGS, an etiology was identified in 70%. Eight patients had a positive result on mNGS which resulted in change in management for the majority of patients. These data suggest that CSF mNGS is high-yield and impacts clinical care. However, given the significant cost of mNGS, future directions include cost analyses to determine when and in whom CSF mNGS should be sent.

Disclosures: Asim A. Ahmed, MD, Karius (Employee)

348. Etiology of Eosinophilic Meningitis in Korea

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Session: P-11. CNS Infection

Background: Eosinophilic meningitis is defined as the presence of more than 10 eosinophils per mm^3 in the cerebrospinal fluid (CSF), or eosinophils accounting for more than 10 percent of CSF leukocytes in a patient with symptoms or signs suggestive of acute meningitis. Parasites are known to be the most common cause of eosinophilic meningitis worldwide, but there is limited research on patients in South Korea.

Methods: We retrospectively reviewed patients with eosinophilic meningitis at a tertiary hospital in Seoul, South Korea, from 2004 to 2018. Patients who were suspected of having a non-infectious cause were excluded. Etiology and clinical characteristics such as age, sex, risk factors, symptoms and signs, laboratory and radiologic findings, treatment, and prognosis were identified.

Results: Of the 35 patients included in this study, 11 (31.4%) had parasitic causes, with 8 (22.9%) diagnosed as neurocysticercosis, and 3 (8.6%) as toxocara meningitis. Four (11.4%) were diagnosed with fungal meningitis, and underlying immunodeficiency was found in 2 of these patients. Tuberculous meningitis was suspected in 4 (11.4%), while viral and bacterial meningitis were rare causes of eosinophilic meningitis, with 2 (5.7%) and 1 (2.9%) patients, respectively. One patient with neurocysticercosis and one patient with fungal meningitis died, while 8 (22.9%) had remaining neurologic sequelae. The etiology was unknown in 13 patients (37.1%). Four of these patients received empirical anti-tuberculosis therapy, while 5 were treated empirically with acyclovir.

Table 1. Clinical and radiologic characteristics of patients with eosinophilic meningitis according to etiology

	Neuro-cysticercosis N = 8	Toxocara meningitis N = 3	Fungal meningitis N = 4	Probable TB meningitis N = 4	Viral meningitis N = 2	Bacterial meningitis N = 1	Meningitis of unknown etiology N = 13	Total N = 35
Age at diagnosis years (mean±SD)*	59.9±11.2	33.7±1.5	37.8±30.1	40.0±14.4	20.5±12.0	0.5±0	31.5±22.9	38.4±22.5
Sex								
Male (%)	6 (75)	3 (100)	2 (50)	3 (75)	1 (50)	1 (100)	5 (38.5)	21 (60.0)
History of travel (%)	0 (0)	2 (66.7)	1 (25)	0 (0)	1 (50)	0 (0)	2 (15.4)	6 (17.1)
History of raw food ingestion (%)	1 (12.5)	3 (100)	0 (0)	0 (0%)	0 (0)	0 (0)	1 (7.7)	5 (14.3)
Symptoms or signs								
Headache	3 (37.5)	3 (100)	3 (75)	4 (100)	2 (100)	0 (0)	10 (76.9)	25 (71.4)
Vomiting	0 (0)	1 (33.3)	3 (75)	2 (50)	2 (100)	1 (100)	5 (38.5)	14 (40.0)
Fever	0 (0)	2 (66.7)	2 (50)	2 (50)	1 (50)	1 (100)	5 (38.5)	13 (37.1)
Cranial nerve palsy	0 (0)	0 (0)	1 (25)	0 (0)	0 (0)	0 (0)	2 (15.4)	3 (8.6)
Dizziness	1 (12.5)	0 (0)	0 (0)	2 (50)	0 (0)	0 (0)	2 (15.4)	5 (14.3)
Altered consciousness	1 (12.5)	0 (0)	1 (25)	2 (50)	0 (0)	0 (0)	7 (53.8)	11 (31.4)
Gait disturbance	4 (50)	0 (0)	1 (25)	1 (25)	0 (0)	0 (0)	1 (7.7)	7 (20.0)
Neck stiffness	1 (12.5)	1 (33.3)	1 (25)	2 (50)	1 (50)	0 (0)	1 (7.7)	7 (20.0)
CSF, median (range)								
WBC count (/μL)	50 (2-270)	680 (120-1000)	195 (33-307)	162 (58-470)	21.5 (12-31)	45	57 (5-800)	90 (2-1000)
Percentage of eosinophil in WBC (%)	16 (11-27)	54 (36-73)	19.5 (18-57)	17 (16-30)	27.5 (11-44)	16	20 (10-71)	18 (11-73)
Protein level (mg/dL)	89.3 (29.7-134.9)	66.8 (44.7-83.1)	88.4 (59.6-134.7)	160.3 (73.6-251.5)	49.1 (42.6-55.5)	178.7	55.9 (22.6-1042.7)	82.9 (22.6-1042.7)
Glucose level (mg/dL)	52 (13-79)	55 (49-68)	44 (35-52)	38.5 (9-61)	62 (61-63)	46	52 (2-91)	52 (2-91)
Peripheral blood eosinophilia (%)	0 (0)	3 (100)	1 (25)	1 (25)	1 (50)	0 (0)	4 (30.8)	10 (28.6)
Image findings								
Meningeal enhancement (%)	2 (25)	1 (33.3)	3 (75)	4 (100)	0 (0)	1 (100)	7 (53.8)	18 (51.4)
Hydrocephalus (%)	7 (87.5)	0 (0)	1 (25)	0 (0)	0 (0)	0 (0)	0 (0)	8 (22.9)
Acute infarction (%)	0 (0)	0 (0)	2 (50)	2 (50)	0 (0)	0 (0)	0 (0)	4 (11.4)
Treatment with steroids (%)	5 (62.5)	3 (100)	4 (100)	3 (75)	0 (0)	0 (0)	8 (61.5)	23 (65.7)
Number of deaths (%)	1 (12.5)	0 (0)	1 (25)	0 (0)	0 (0)	0 (0)	0 (0)	2 (5.7)
Number of patients with neurologic sequelae (%)	5 (62.5)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3 (23.1)	8 (22.9)

* SD: standard deviation

Conclusion: Parasite infections, especially neurocysticercosis and toxocariasis, were the most common cause of eosinophilic meningitis in South Korean patients. Fungal meningitis, while relatively rare, is often aggressive and should always be considered when searching for the cause of eosinophilic meningitis.

Disclosures: **All Authors**: No reported disclosures

349. Hardware-Associated Multidrug-resistant Pseudomonas aeruginosa Meningitis Treated with Ceftolozane-Tazobactam

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Session: P-11. CNS Infection

Background: Although new treatment options for resistant gram negative rods have been recently developed, data on the use of these novel antibiotics for the treatment of central nervous system (CNS) infections is limited.

Methods: We present the case of a 9-year-old with a complex medical history including cerebral palsy and ventriculoperitoneal shunt dependence who was found to have highly resistant *Pseudomonas aeruginosa* growing from multiple cerebrospinal fluid (CSF) cultures. Susceptibility testing revealed resistance to multiple classes of antibiotics including carbapenems. Multiple antibiotics were considered for treatment; factors including molecular size, lipophilicity, plasma protein binding, and active transport as well as previously published data were weighed in selecting an antibiotic.

Results: The patient was treated with 28 days of ceftolozane-tazobactam. CSF cultures cleared following externalization of the ventriculoperitoneal shunt to an external ventricular drain. There was no recrudescence of *Pseudomonas aeruginosa* in the CSF following clearance.

Conclusion: We present the first reported case of ceftolozane-tazobactam used as the sole agent for treatment of resistant gram negative rod infection in the CNS. This agent may be a reasonable choice for other patients requiring treatment of highly resistant infections in this protected space.

Disclosures: **Ofer Levy, MD, PhD**, **Avidea** (Other Financial or Material Support, collaboration)**Exicure** (Other Financial or Material Support, collaboration)**Multiple patents** (Other Financial or Material Support, I am a named inventor on patents related to vaccine adjuvants)

350. Neurocysticercosis – Gender Differences in Clinical Presentations

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Session: P-11. CNS Infection

Background: Neurocysticercosis is a Neglected Tropical Disease and an important public health issue. Our goal was to collect and analyze data regarding clinically significant gender differences among our Neurocysticercosis patients.

Methods: A retrospective chart search with ICD 9/ ICD 10 diagnostic code for Neurocysticercosis and neuroimaging suggestive of Neurocysticercosis was performed for clinical encounters in the hospital or affiliated clinics between years 2013–2018. After a careful chart review, patients who were clinically diagnosed with Neurocysticercosis were included in the study. T-test was used to compare means of continuous variables and chi-square test to compare proportions of categorical variables.

Results: Among 90 total patients included, male (49.4%) and female (50.6%) distribution were nearly identical. The mean age in females was found to be higher than males (52.5 vs 42.0, P < 0.0001). Almost an equal number of males and females presented with either seizures (63.6% vs 57.8%, P= 0.85), headaches (25.0% vs 28.9%, p= 0.85), or other symptoms (11.4% vs 13.3%, p= 0.85). Males had more generalized seizures compared to females (60% vs 38%, P= 0.37), although this result was not statistically significant. Females were more likely to present with > 1 lesion (82.2% vs 56.8%, P= 0.01). Males were more likely to have cystic lesions (64.7% vs 27.9%, P < 0.001) compared to females who had more calcified lesions on presentation (65.1% vs 20.6%, P < 0.001). Male patients were more likely to have contrast enhancement or edema surrounding the lesions (61.4% vs 33.3%, P= 0.01) and were more likely to require treatment with Albendazole/Praziquantel (75.8% vs 31.7%, P < 0.001).

Conclusion: Although previously reported data is limited, there is a suggestion that there are gender differences in host immune response and that inflammation surrounding parenchymal lesions is more intense in females. This study suggests that men either present early in the disease phase or have different immune responses than women and require anti-parasitic therapy more frequently. More research in this aspect is needed.

Disclosures: **All Authors**: No reported disclosures

351. Neurocysticercosis: Clinical Experience in Large Urban Safety Net Hospital in Chicago

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Session: P-11. CNS Infection

Background: Neurocysticercosis is a major cause of adult-onset epilepsy and premature death in adults. We aimed to describe the clinical and demographic features in a large patient population in Chicago of which published data is limited.

Methods: A retrospective chart search with ICD9/ICD10 diagnostic code for Neurocysticercosis and neuroimaging suggestive of Neurocysticercosis was performed for clinical encounters in the hospital or affiliated clinics between 2013–2018. After a careful chart review, patients who were clinically diagnosed with Neurocysticercosis were included in the study. A descriptive analysis of the data is presented.

Results: Out of a total of 90 patients all of whom were immigrants, the country of origin was reported in 60% and the majority were from Mexico (83.3%). The mean age at the time of diagnosis was 32.3 years (median 29.5, range < 1 to 67). The most common presenting complaints were seizures (62.1%) and headache (27.6%). The most common type of seizure was generalized (48.8%) followed by focal (36.6%). Approximately a third of patients also had hydrocephalus (33.7%). Many patients had > 1 lesion on neuroimaging (70.7%) out of which the most common type were parenchymal lesions (60.9%) followed by ventricular and subarachnoid. Calcified (45.5%) and cystic lesions (44.2%) were found in about equal number of cases. A minority had both types of lesions (10.4%). Contrast enhancement or edema surrounding the lesion was found in about half (47.2%) of the cases. The number of years since the last visit to an endemic country before diagnosis was reported in 46.6% of cases and the mean was 9.8 years (range 0 to 30) and it was found that per year increase since the last visit increased the chance of having contrast enhancement/edema surrounding the lesion in neuroimaging or requiring treatment with antiparasitic medications. (OR 1.77 (1.08–2.90), P= 0.03).