Disclosures. All Authors: No reported disclosures

271. US Hospitalizations and 60-Day Readmission Rates Associated with Herpes Simplex Virus Encephalitis
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Session: P-13. CNS Infection

Background. Herpes Simplex encephalitis (HSE) is the most common cause of encephalitis hospitalizations with a known etiology. However, it remains a challenge to capture a comprehensive and robust understanding of the disease, particularly for long-term outcomes after acute diagnosis and treatment. In particular, there is a growing body of literature showing increased concern for recurrent encephalopathic disease several weeks after initial HSE recovery. We sought to describe and analyze features associated with all cause readmissions and encephalopathy associated readmissions amongst HSE cases.

Methods. HSE hospitalizations and 60-day rehospitalizations were assessed in a retrospective cohort using linked hospitalizations from the Healthcare Utilization Project (HCUP) National Readmission Database (NRD) from 2010 through 2017. Risk factors for all-cause readmissions and encephalopathy associated readmissions were assessed with a weighted logistic regression model.

Results. There were 10,272 HSE cases in the United States between 2010 and 2017, resulting in a national rate of 4.95 per 100,000 hospitalizations. A total of 23.7% were readmitted at least once within 60 days. Patients that were readmitted were older (mean age 62.4 vs. 57.9; p < 0.0001), had a greater number of procedures at the index hospitalization (aOR 1.03, p < 0.0001) and have a higher Charlson comorbidity score (aOR 1.11, p = 0.0001). Amongst those readmitted, 465 (16.5%) had an encephalopathy related diagnosis. Over eight years, the prevalence of encephalopathy associated readmissions increased from 0.12 to 0.20 (figure 1). Encephalopathy specific readmissions were found to be associated with greater age (mean age 6.9 vs. 6.17; p = 0.004) and findings of cerebral edema at index hospitalization (aOR 2.16, p < 0.0001).

Most Common Diagnosis Groups Listed at the 60-Day Readmission

Conclusion. HSE 60-day readmissions are relatively common, particularly among older and sicker individuals. Readmissions were often associated with new neurological symptoms concerning for either recurrent or new encephalopathic events. Early signs and symptoms of neurological disease at index were correlated with encephalopathic specific readmissions.

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272. Clinical Utility of Sulfamethoxazole Serum Level Monitoring in the Treatment of Brain Absceses due to Nocardia Species
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Session: P-13. CNS Infection

Background. Although trimethoprim-sulfamethoxazole (TMP-SMX) has consistently demonstrated significant interindividual variability, therapeutic drug monitoring is used to optimize dosing and avoid adverse reactions that may contribute to treatment interruption. While data exists on the use of SMX level monitoring in infectious disease departments, there is a lack of data in SMX serum monitoring utility for invasive nocardial brain abscess (BA) and underwent SMX testing level from January 2010 to December 2020.

Methods. We retrospectively reviewed adults who received TMP-SMX to treat nocardial brain abscesses (BA) and underwent SMX testing level from January 2010 to December 2020. We encountered 76 cases among which 43 were males (56.6%). The mean age was 32±18 years. The revealing symptoms included fever (97.4%), cephalgia (73.7%), vomiting (64.5%) and arthralgia (51.3%). Lumbar puncture revealed a median white blood cell count of 120(56-340)/mm3. Lymphocytic pleocytosis was noted in 22 cases (22.6%). Elevated cerebrospinal fluid (CSF) protein level was noted in 37 cases (48.7%) with a median of 0.84(0.6-1.3) g/L. Low CSF glucose level was noted in 14 cases (18.4%). There were 70 cases (92.1%) of meningitis and 6 cases of meningoencephalitis (7.9%). The causative agent included Rickettsia species in 47 cases (61.8%) and Brucella species in 17 cases (22.4%) and Mycoplasma species in 12 cases (15.8%). Laboratory investigations included elevated C-reactive protein levels (40.7%), thrombocytopenia (32.8%) and increase in hepatic enzyme levels (21%). Anemia was noted in 27 cases (35.5%), leukocytosis in 24 cases (31.5%) and leukopenia in 6 cases (7.8%). Blood and CSF cultures were positive for Brucella in 2 cases (2.6%) and Mycoplasma in 5 cases (6.5%), respectively. The mean duration of treatment was 156±64 days for brucellosis cases, 9±4 days for rickettsiosis cases and 10±6 days for Mycoplasma cases. The disease evolution was favorable in 72 cases (94.7%). Four patients were dead (5.3%). Complications were noted in 5 cases (6.5%) and sequelae in 2 cases (2.6%).

Conclusion. Intracellular bacteria including Brucella, Rickettsia and Mycoplasma species should be considered in front of neurological symptoms. Meningitis with lymphocytic pleocytosis was the most common clinical presentation. An early diagnosis followed by the adequate treatment might avoid complications and death.

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274. Legionella bozemanii (Fluorobacter bozemanii) Brain Abscess in a Renal Transplant Recipient
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Session: P-13. CNS Infection

Background. Legionnaires’ disease is a potentially fatal multi-system disease caused by Legionella species. However, extra-pulmonary Legionella disease is rare and is typically associated with Legionella species other than L. pneumophila in immunocompromised patients.

Methods. We present a 55-year-old immunocompromised male with history of living-related renal transplant secondary to IgA nephropathy (day 0) which was complicated by T-cell mediated rejection requiring anti-thymocyte globulin and eotuzumab (day 130).

Results. Patient was hospitalized on day 184 with community-acquired pneumonia and treated with piperacillin-tazobactam and azithromycin. Three weeks later (day 214), he presented with new-onset seizures and was found to have a frontal brain abscess on MRI. His clinical course and brain imaging worsened despite undergoing multiple operative drainage procedures, placement of an extra- ventricular drain, and receiving broad-spectrum antimicrobials. L. bozemanii was first identified from cerebrospinal fluid (CSF) on buffered charcoal yeast extract (BCYE) agar from day 240 and was also later confirmed by 16S rRNA sequencing. Susceptibilities were unavailable due to poor organism growth. Of note, his allergy history was significant for rash with ciprofloxacin and levofoxacin. Based on the low severity of the allergic reaction and need for central nervous system penetration, moxifloxacin 400 mg intravenously every 24 hours was initiated on day 244 in addition to broad-spectrum antibiotics. Subsequent CSF cultures were positive for L. bozemanii until the CSF culture on day 250. Due to poor clinical response, azithromycin and intrathecal polymyxin B were added for salvage therapy on day 255. His neurological status continued to worsen and he eventually succumbed to his illness on day 262.

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New solitary ring-enhancing lesion with significant surrounding vasogenic edema within the anterior right frontal lobe.
09/23/20 MRI Brain

Fluoribacter Bozemanae

Formerly known as Legionella bozemanii, an intracellular GNR grown on BCYE.

Conclusion. We present a diagnostically challenging case of L. bozemanii brain abscess in an immunocompromised patient. To our knowledge, this is the first case of culture proven L. bozemanii brain abscess in the literature. Considering the fastidious growth of the organism, fatal nature of the infection, and narrow therapeutic profile, Legionella infection should be considered in a multi-system disease in immunocompromised patients.

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275. Clinical and Laboratory Predictors of Stroke Associated with COVID-19 Disease
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Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. Although SARS-CoV-2 predominantly targets the respiratory system, it has also been associated with vascular complications including stroke. Identifying COVID-19 patients at elevated risk for stroke can help inform target anti-coagulation strategies. We sought to understand how symptoms and laboratory markers at presentation with COVID-19 relate to stroke risk.

Methods. We enrolled a cohort of 1324 subjects who were hospitalized with COVID-19 across six PennMedicine hospitals between April and August 2020 and performed retrospective, manual chart review to measure exposures including presenting symptoms and admission inflammatory markers. Data were organized with a REDCap database, and analyses were performed using R statistical software, with Bayesian binomial regression models fit using Stan Hamiltonian Monte Carlo via the “brms” package.

Results. Among 1324 subjects, 19 stroke events were observed within 30 days of COVID-19 diagnosis. Admission inflammatory markers, including C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), ferritin, and D-dimer, were poor predictors of stroke risk. Among presenting symptoms, including respiratory, gastrointestinal, dermatologic, and neurologic features of COVID-19 disease, only altered mental status documented on presentation (in 529 subjects) was significantly associated with stroke risk (odds ratio 6.06, 95% credible interval 2.16 - 18.7).

Conclusion. Inflammatory markers associated with COVID-19 disease severity did not discriminate patients at high versus low risk of stroke in this cohort. Altered mental status documented on presentation was significantly associated with incident stroke during COVID-19 disease.

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276. SARS-CoV-2 Infection in Solid Organ Transplant Candidates and Recipients at Texas Children’s Hospital: A Retrospective Review
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