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 encephalopathy specific readmissions.

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272. Clinical Utility of Sulfamethoxazole Serum Level Monitoring in the Treatment of Brain Abscesses due to Nocardioid 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 pneumocystis, there is a lack of data in SMX serum monitoring utility for invasive nocardial disease. In addition to broad-spectrum antibiotics. Subsequent CSF cultures were positive in 2 cases (2.6%) and 5 cases (16.5%), respectively. The mean duration of treatment was 156±94 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 sequela 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 etoizuab (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 levofloxacin. 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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273. Neurological Involvement Caused by Intracellular Bacteria
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Session: P-13. CNS Infection

Background. Infection of the central nervous system is a severe and fatal disease. Causative agents include bacteria, viruses or fungi. Intracellular bacteria are not only overlooked, but also underdiagnosed. We aimed to study the clinical, laboratory and evolutionary features of neurological involvement caused by intracellular bacteria.

Methods. We conducted a retrospective study including all patients hospitalized in the infectious disease department for neurological involvement caused by intracellular bacteria between 1995 and 2020. The diagnosis was confirmed by serology.

Results. 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%), cephalalgia (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 47% of the cases. Elevated cerebrospinal fluid (CSF) protein level was noted in 37 cases (48.7%) with a median of 0.84[0.6-1.3]/L. Low CSF glucose level was noted in 14 cases (18.4%). There were 70 cases (92.1%) of meningitis and 6 cases of meningocencephalitis (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 25 cases (35.5%), leukocytosis in 24 cases (31.5%) and leucopenia in 6 cases (7.8%). Blood and CSF cultures were positive for Brucella in 2 cases (2.6%) and 5 cases respectively. The mean duration of treatment was 156±94 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%).