Abstracts

Autoimmune and Infectious Encephalitis: Development of A Discriminative Tool for Early Diagnosis and Initiation of Therapy

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Background: Encephalitis originates from diverse autoimmune and infectious etiologies. Diagnostic challenges arise due to the spectrum of presentation and the frequent absence of specific biomarkers. This study aimed to comprehensively characterize and differentiate autoimmune encephalitis (AE) from infectious encephalitis (IE) in adults, and disentangle clinical, paraclinical, and therapeutic differences.

Methods: A cohort study spanning 10 years was conducted across three Austrian tertiary care hospitals. Inclusion criteria comprised adults with probable or definite encephalitis. Demographics, clinical features, technical findings, treatment modalities, and outcomes were collected from the electronic patient files. A follow-up was performed via telephone interviews and clinical visits.

Results: Of 149 patients, 17% had AE, 73% IE, and 10% encephalitis of unknown etiology. Significant differences between AE and IE included the prevalence of acute symptomatic seizures (AE: 85% vs. IE: 20%, $p<0.001$), fever (8% vs. 72%, $p<0.001$), headache (15% vs. 61%, $p<0.001$), and focal neurological deficits (56% vs. 23%, $p=0.004$), respectively. Paraclinical differences comprised lower CSF pleocytosis in AE compared to IE (median 6 cells/µl vs. 125 cells/µl, $p<0.001$). Epileptic discharges on EEG and MRI lesions were more prevalent in AE than IE (50% vs. 14%, $p<0.001$; 50% vs. 28%, $p=0.037$). The modified Rankin Scale scores at discharge and last follow-up (median duration 2304 days, IQR 1433–3274) indicated favorable outcomes in both groups.

Conclusion: This comprehensive analysis provides insights into the epidemiology, clinical, paraclinical, and therapeutic aspects and the outcomes of AE and IE in adults. We developed a diagnostic tool that facilitates early differentiation between AE and IE, aiding in timely therapeutic decision-making.

Keywords: Encephalitis, Inflammation, Infection, Differential diagnosis, Prognosis, Therapeutic management

Reference: Moser T, Gruber J, Mylonaki E, Böhm V, Schwarzenhofer D, Tröscher AR, Lenzenweger E, Krehan I, Söllradl E, Leitinger M, Helbok R. Autoimmune and infectious encephalitis: development of a discriminative tool for early diagnosis and initiation of therapy. Journal of Neurology. 2024;271(12): p7583-7591

Human metapneumovirus infection is associated with a substantial morbidity and mortality burden in adult inpatients

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Background: Human metapneumovirus (hMPV) is one of the leading respiratory viruses. This prospective observational study aimed to describe the clinical

features and the outcomes of hMPV-associated lower respiratory tract infections in adult inpatients.

Methods: Consecutive adult patients admitted to one of the 31 participating centers with an acute lower respiratory tract infection and a respiratory multiplex PCR positive for hMPV were included. A primary composite end point of complicated course (hospital death and/or the need for invasive mechanical ventilation) was used.

Results: Between March 2018 and May 2019, 208 patients were included. The median age was 74 [62–84] years. Ninety-seven (47%) patients were men, 187 (90%) had at least one coexisting illness, and 67 (31 %) were immunocompromised. Median time between first symptoms and hospital admission was 3 [2–7] days. The two most frequent symptoms were dyspnea (86 %) and cough (85%). The three most frequent clinical diagnoses were pneumonia (42%), acute bronchitis (20%) and acute exacerbation of chronic obstructive pulmonary disease (16%). Among the 52 (25 %) patients who had a lung CT-scan, the most frequent abnormality was ground glass opacity (41 %). While over four-fifths of patients (81%) received empirical antibiotic therapy, a bacterial coinfection was diagnosed in 61 (29%) patients. Mixed flora (16%) and enterobacteria (5%) were the predominant documentations. The composite criterion of complicated course was assessable in 202 (97 %) patients, and present in 37 (18%) of them. In the subpopulation of pneumonia patients (42%), we observed a more complicated course in those with a bacterial coinfection (8/24, 33 %) as compared to those without (5/60, 8%) ($p = 0.02$). Sixty (29%) patients were admitted to the intensive care unit. Among them, 23 (38 %) patients required invasive mechanical ventilation. In multivariable analysis, tachycardia and alteration of consciousness were identified as risk factors for complicated course.

Conclusion: hMPV-associated lower respiratory tract infections in adult inpatients mostly involved elderly people with pre-existing conditions. Bacterial coinfection was present in nearly 30% of the patients. The need for mechanical ventilation and/or the hospital death were observed in almost 20% of the patients.

Keywords: Human metapneumovirus, Pneumonia, Viral pneumonia, Respiratory viruses

Reference: Philippot Q, Rammaert B, Dauriat G, Daubin C, Schlemmer F, Costantini A, Tandjaoui-Lambiotte Y, Neuville M, Desrochettes E, Ferré A, Contentin LB. Human metapneumovirus infection is associated with a substantial morbidity and mortality burden in adult inpatients. Heliyon. 2024;10(13), e33231