Results: A total of 83 patients with MS were recruited, with ages ranging from 19 to 66 years. The study population had a predominantly female sex ratio of 3.4. The majority of participants (75.9%) were from urban areas, and 74.7% had a university-level education. Moreover, 49.1% were married, and 60.2% were employed. Regarding medical history, 40.3% had a comorbid condition, and 30.1% had a psychiatric history. The mean age at disease onset was 26 ± 10 years. First-line treatments were prescribed to 27.7% of patients. Second-line treatments were prescribed to 69.9% of patients.
The mean overall score on the SF-36 scale was 53.56 . According to MSQ ol54, the most affected domains were sexual function, physical health limitations, and sleep. The least affected domains were pain, social function, and sexual satisfaction.The SF-36 mean score decreased from 50.59 in patients with more than 10 lesions to 21.37 in those with fewer than 10 lesions, with a statistically significant difference ($p = 0.012$). We found a significant relationship between a higher number of lesions (>10) and the dimensions of physical health ($p = 0.007$), emotional well-being ($p = 0.027$), perception of health ($p = 0.025$), social function ($p = 0.017$), distress ($p = 0.049$), cognitive function ($p = 0.038$), and overall quality of life ($p = 0.029$). Thalamic lesions were associated with the dimension of distress ($p = 0.048$). The presence of new lesions in the most recent follow-up MRI was associated with emotional well-being ($p=0.018$).
Conclusions: The study highlights a significant correlation between MRI findings and quality of life inpatients with MS. Understanding this relationship is crucial for developing targeted treatment strategies that address both the physical and psychological aspects of the disease. By integrating MRI assessments into routine care, healthcare providers can better support the well-being of individuals living with MS and tailor interventions to their specific needs.

Disclosure of Interest: None Declared

EPP469

Using EEG to challenge ASD heterogeneity: Stratification of brain functional connectivity reveals clinically meaningful subgroups of ASD

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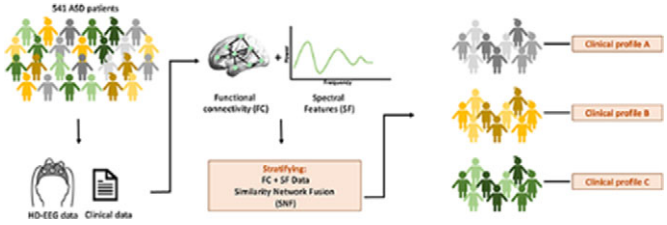
Introduction: Heterogeneity in both the etiology and the phenotypic presentation of autism spectrum disorder (ASD) poses a major challenge to clinical and translational research. Attempts to stratify individuals with ASD have been primarily based on behavioral criteria, but clinical subtyping is blind to the underlying neurobiological mechanisms and has limited predictive value of the forthcoming developmental path. Yet, it is still unclear whether and how atypical brain functional connectivity can account for individual differences across ASD-related symptomatology and behaviors.
Objectives: The goal of the study was to identify clinically meaningful subgroups of young children with ASD based on distinctive patterns of brain functional connectivity, to better understand the neural substrates underlying ASD heterogeneity.
Methods: We combined resting-state EEG data from 4 independent datasets on 541 children with ASD aged 2-12 years to estimate and stratify brain functional connectivity measures. We performed an unsupervised clustering analysis of the cortical network properties, using data-driven similarity network fusion and source-based spectral analysis. We then compared the clinical profile of the identified clusters to define symptom-linked connectivity dimensions.
Results: We identified four subgroups of ASD children with distinct cortical network properties, mainly mapped in the fronto-parietal and precentral cortices for the alpha band, and in the middle temporal cortex for beta band. These four clustered dimensions of functional connectivity were associated to distinctive different clinical symptom profiles, specially with respect to cognitive level, adaptive behavior and motricity.

Image 1:



Conclusions: Our findings shed light on atypical brain network topology conferring risk for specific phenotypic manifestations of ASD, which may implicate unique underlying neurobiological mechanisms. Cross-validation stability hints at a solid stratification model to challenge ASD heterogeneity. Collectively, the stratification of well-defined neural signatures that give rise to the clinical heterogeneity of ASD has the potential to provide more accurate prognosis and help to select the optimal strategy for therapeutic intervention.

Disclosure of Interest: None Declared

EPP470

Neuroanatomical and neuroimaging biomarkers of "MRI-defined vascular depression"

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Introduction: "MRI-defined vascular depression" suggests that vascular lesions and small vessels disease induce depression by disruption of frontal–subcortical–limbic networks.Vascular depression is associated with disruption or cortico-striato-pallido-thalamo-cortical pathways or their modulating systems.
Objectives: Based on clinical correlates and structural MRI findings we aim to evaluate causal relationship between specific brain changes