

Conclusions: The analysis of the IQ familiarity and the concordance/discordance of the patients' and relatives' IQ, offers a new approach for the characterization of different premorbid, clinical and cognitive profiles in FEP patients. The relationship between deviation from the family-IQ and poor premorbid childhood adjustment supports the neurodevelopmental hypothesis of schizophrenia.

Disclosure: No significant relationships.

Keywords: Familial aggregation; Intelligence Quotient; Neurocognition; First episode of psychosis

00135

Altered dynamic functional topology in first-episode untreated patients with schizophrenia can aid in early diagnosis

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Introduction: There is a growing consensus on brain networks that it is not immutable but rather a dynamic complex system for adapting environment. The neuroimaging research studying how brain regions work collaboratively with dynamic methods had demonstrated its effectiveness in revealing the neural mechanisms of schizophrenia.

Objectives: To investigate altered dynamic brain functional topology in first-episode untreated schizophrenia patients (SZs) and establish classification models to find objective brain imaging biomarkers.

Methods: Resting-state-functional magnetic resonance data for SZs and matched healthy controls were obtained(Table1).

Table1
Demographic and clinical characteristics of patients with schizophrenia and healthy controls. Continuous variables were given as mean ± SD.

	schizophrenia (n=102) ^c	healthy control (n=102) ^c	t/χ ² ^c	P-value ^c
Age (years) ^c	25.31 ± 7.76 ^c	25.68 ± 7.37 ^c	0.342 ^{a,c}	0.733 ^c
Gender (male/female) ^c	44/58 ^c	48/54 ^c	0.317 ^{b,c}	0.574 ^c
Education (years) ^c	12.80 ± 2.76 ^c	12.99 ± 3.14 ^c	0.450 ^{a,c}	0.653 ^c
PANSS ^c				
Total score ^c	89.13 ± 18.21 ^c	- ^c	- ^c	- ^c
positive symptoms ^c	25.07 ± 6.67 ^c	- ^c	- ^c	- ^c
negative symptoms ^c	18.25 ± 8.54 ^c	- ^c	- ^c	- ^c

^a, two-sample t-test; ^b, chi-square test. ^c
Abbreviations: PANSS, Positive and Negative Syndrome Scale.

Power-264-template was used to extract nodes and sliding-window approach was carried out to establish functional connectivity matrices. Functional topology was assessed by eigenvector centrality(EC) and node efficiency and its time-fluctuating was evaluated with coefficient of variation(CV). Group differences of dynamic topology and correlation analysis between Positive and Negative Syndrome Scale(PANSS) scores and topology indices showing group differences, which also were used in establishing classification models, was examined.

Results: The CV of node efficiency in angular and paracingulate gyrus was larger in SZs. There are 13 nodes assigned into several

brain networks displaying altered CV of EC between groups(Figure1.A). Fluctuation of EC of the node in DMN, which was lower in SZs, showed negative correlation with PANSS total scores(Figure1.B). Dynamic functional topology of above nodes was used to train classification models and demonstrated 80% and 71% accuracy for support vector classification(SVC) and random forest(RF), respectively(Figure2).

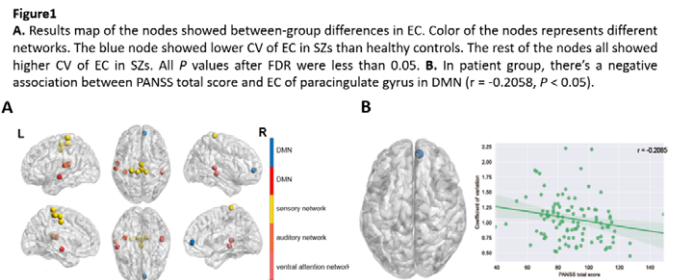
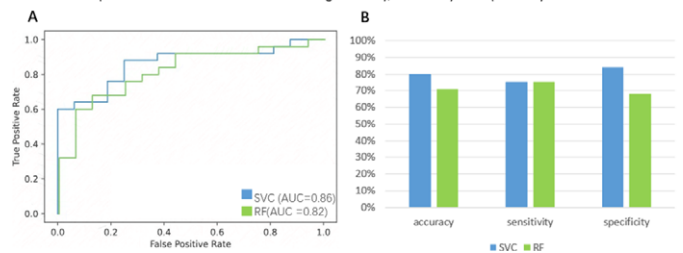


Figure3
A. Receiver Operating Characteristic (ROC) curve and area under curve (AUC) of SVC and RF. B. The histogram indicates the performance of classification including accuracy, sensitivity and specificity.



Conclusions: Dynamic functional topology illustrated a capability in identifying SZs. Aberrated dynamics of DMN relevant to severity of patient's symptoms could reveal the reason why it contributed to classification.

Disclosure: No significant relationships.

Keywords: Positive and Negative Syndrome Scale scores; schizophrenia; classification; dynamic functional topology

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Change people attitudes towards schizophrenia using a short video

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Introduction: Social contact-based video interventions effectively reduce stigma toward individuals with psychosis.