Resting-state attentional networks abnormalities in ultra high-risk subjects are associated with negative symptoms and cognitive deficits.

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INTRO

- Resting-state EEG microstates have previously demonstrated alterations in network dynamics in schizophrenia.
- Decreased microstate D (related to attentional networks) and increased microstate C (related to saliency networks) are some of the most replicated findings in this field.
- However, little is known about this topic in ultra high-risk (UHR) syndrome (Fig. 1) and its relationship with clinical symptoms.

METHODS

1. A cross-sectional study with 23 UHR and 29 age and sex healthy matched controls (Fig. 2).
2. Each subject performed a two-minutes eyes open + two-minutes eyes closed 64-channel EEG resting state session. Cognitive (MCCB scale) and clinical (SIPS scale) baseline evaluations were taken.
3. An open-source EEGlab microstate toolbox for MATLAB was used for microstate analysis (Fig. 3).
4. Unpaired t-test for EEG data and Pearson´s correlation to discard antipsychotic influence were used for statistical analyses.

RESULTS

- UHR subjects presented decreased microstate D and increased microstate B temporal variables (Fig. 4).
- No correlations were found between microstate statistics and antipsychotic treatment.
- Microstate D variables were negatively correlated with cognitive and negative symptoms and microstate B variables were positively correlated with cognitive symptoms (Fig. 5).

Psychosis ultra high-risk subjects present replicable EEG resting state attentional network abnormalities (microstate D) that are associated with negative symptoms and cognitive deficits.

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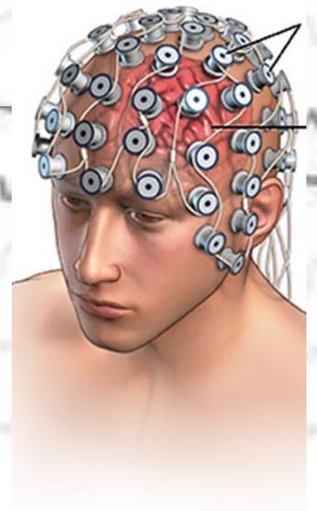
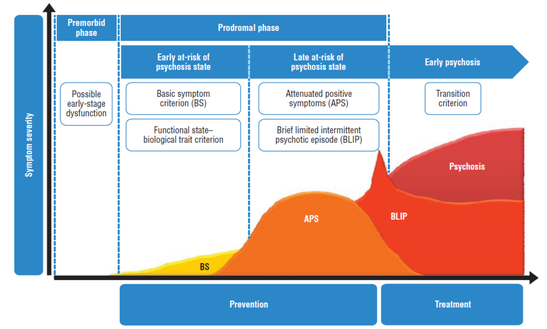


Fig N°1.- UHR syndrome



Fusar-Poli P., 2013

Fig N°2.- Sociodemographic description

	UHR (n = 23)	**Controls** (n = 29)	
		Mean (SD)	***p-value***
Age (years)	19.5 (5.3)	21.2 (5.3)	n.s.
Education (years)	11.6 (3.0)	14.1 (4.0)	n.s.
Chlorpromazine eq. (mg)	110.9 (99.1)	--	--
		n (%)	***p-value***
Gender (male)	15 (65.2)	16 (55.2)	n.s.

Fig N°3.- Microstate topographic analysis

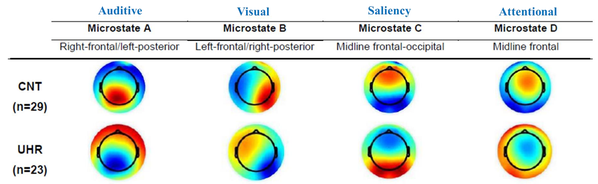


Fig N°4.- Microstate temporal variables analyses

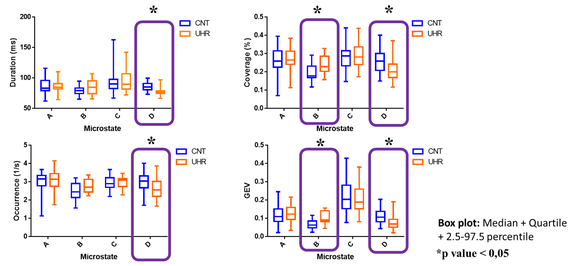
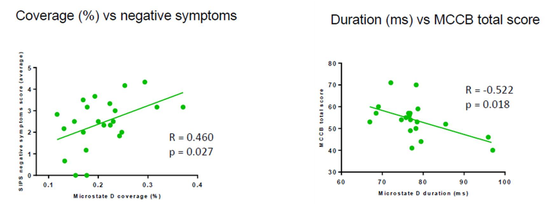


Fig N°5.- Microstate D clinical and cognitive correlations



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