Article: EPA-0863
Topic: E06 - e-Poster Oral Session 06: Child Psychiatry and Personality Disorders

PROGRESSION OF CHANGES IN BRAIN STRUCTURE AND EXECUTIVE FUNCTIONS IN CHILDREN AND ADOLESCENTS WITH FIRST-EPISODE PSYCHOSIS.

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Background: Previous studies have reported progressive brain changes and cognitive deficits in early-onset psychosis (EOP). Little is known on the relationship between longitudinal changes in brain structure and neurocognition.

Methods: Naturalistic 5-year prospective study comparing frontal gray matter (GM) volume and executive functions in adolescents with a first episode of EOP and a sample of healthy controls at baseline, 2-year and 5-year follow-up.

Results: Thirty-six patients (age at baseline 15.8 ±.7, 66.6% male) and 34 controls (15.4±1.4, 55.9% male) comprised the study sample. Both patients and controls presented with frontal GM loss during the first five years of follow-up. During the first two years, patients presented with significantly greater GM loss than controls in the left (F=9.642, p=0.003) and right frontal lobe (F=7.585, p=0.008), with no significant differences between year 2 and 5. Patients with EOP performed significantly worse in executive tasks than controls in all visits. During the first two years of follow-up, controls, but not patients, presented with a significant improvement in executive functioning (F=7.523, p=0.009), with similar evolution of cognitive functioning between years 2 and 5 in both groups (F=0.908, p=0.346). Changes in frontal GM volume and executive functioning were not significantly correlated within the entire follow-up period.

Conclusion: Over the first two years of illness, patients with EOP show greater frontal GM loss and less improvement in executive functions than expected. This could be a critical period for the development of deficits in EOP, in which more intensive interventions would be warranted.

https://doi.org/10.1016/S0924-9338(14)78194-5 Published online by Cambridge University Press