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NEUROLOGICAL SOFT SIGNS AND MORPHOLOGICAL CHANGES OF BASAL GANGLIA AND THALAMUS IN PATIENTS WITH FIRST-EPISODE PSYCHOSIS

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Objectives: Minor motor and sensory deficits or neurological soft signs (NSS) are frequently found in individuals suffering from schizophrenia at any stage of their illness. The basal ganglia and the thalamus are accepted as being important for both motor control and integration of sensory input. However, whether NSS are related to structural alterations of these brain regions remains controversial.

Method: 20 patients with a first-episode psychosis were investigated using high-resolution magnetic resonance imaging (MRI) at 3 Tesla. NSS were examined on the Heidelberg Scale after remission of acute symptoms and correlated with volume and shape of striatum, pallidum and thalamus by using sophisticated MRI analyses, namely VBM-DARTEL (volume) and FSL-FIRST (shape).

Results: NSS scores in patients with schizophrenia were significantly associated with volumetric changes and surface alterations in all investigated areas. Associations remained significant when controlling for age, gender, education, medication and intracranial volume.

Conclusion: Our findings lend further support for an involvement of the basal ganglia and the thalamus in NSS.