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# Cognitive impairment in patients with schizophrenia

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## KEY HIGHLIGHTS

In schizophrenic patients, cognition is important due to its status as the main predictor for functioning. The most important cognitive impairments in schizophrenia are working memory and social cognition.

Cognitive symptoms are always present in cases of schizophrenia, but with significant intersubject variability. Multiple aetiologies have been proposed for cognitive impairment; however, the most significant factor would appear to be left dorsolateral prefrontal cortex (DLPFC) dysfunction.

Cognitive functioning declines over the course of schizophrenia. Cognitive symptoms are present from the prodromal phase, which is followed by an intermediate phase characterised by memory deficits, before reaching a plateau. Clinical studies have shown that trauma, especially childhood trauma, results in an increase in cognitive impairment in patients with schizophrenia across various domains.

Certain pharmacological therapies can be effective for the treatment of cognitive defects, for example antipsychotics, which have an indirect impact by reducing psychotic symptoms. However, once the cognitive impairment reaches a plateau, pharmacological treatment is less likely to be effective, making early intervention crucial.

Various new drugs aimed at restoring the excitation/inhibition balance have been investigated in recent studies, including drugs with cholinergic system activity and HDAC inhibitors, which have given some interesting results in animal studies; other strategies being investigated focus on addressing cortical disinhibition by intervening on the ERBB4 interneuron, a setting in which use of spironolactone yielded promising results in a mouse model of schizophrenia.

The impact of cognitive impairment on functioning is a key concern for clinicians and cognitive defects play a considerable role in the prediction of clinical outcomes. Neurocognition and social cognition would appear to be one of the most salient domains to be considered in the clinical characterisation of patients with primary psychosis with a view to a personalisation of treatment.

A number of different models, involving different variables, have been proposed to describe the pathway linking cognitive impairment with functional outcomes and a large meta-analysis has revealed significant correlations between all cognitive domains and psychosocial functioning. However, it would seem that many variables are either not assessed or not targeted by interventions, whereas therapies aimed at promoting cognition and independent living should be an integral part of management programmes for subjects with schizophrenia.

Cognitive remediation is a non-pharmacological, behavioural training-based intervention that aims to improve cognitive processes with the goal of durability and generalisation. It has been seen to have a positive impact on cognitive and functional outcomes even in clinically compromised patients with schizophrenia. Cognitive remediation should be implemented as an element of standard care and deserves more consistent recognition in treatment guidelines.