New Research in Child and Adolescent Schizophrenia

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Introduction

Some of the most interesting new research is aimed at understanding the causes and impact of schizophrenia in children and adolescents. Brain changes have been seen with magnetic resonance imaging (MRI), and early diagnosis is a goal.

Early-Onset Schizophrenia and Gray-Matter Abnormalities[1]

A study was conducted using MRI on early-onset schizophrenic patients to determine regional brain gray-matter abnormalities.

Brain MRIs were conducted on 5 male early-onset schizophrenic patients (mean age, 18.2 ± 0.45 years) and 5 controls (mean age, 19.6 ± 1.82 years) using DSM-IV criteria. Subjects were comparable in age, gender, and socioeconomic status. Voxel-based morphometry was used because it is known that patients with schizophrenia have diverse brain region abnormalities.

The study showed that early-onset schizophrenic patients do have brain differences compared with the controls. It was observed that schizophrenic patients had a significant decrease in regional gray matter when compared with the controls in: medium-superior temporal gyrus (Brodmann area 22), right accumbens nucleus, and left thalamic pulvinar nucleus.

Compared with control patients, preliminary results showed the presence of brain abnormalities in temporolimbic areas in patients with early-onset schizophrenia. These abnormalities are similar to those seen in adult schizophrenia. While these results are encouraging, further studies with larger samples are needed.

Psychopathology in Children of Schizophrenics[2]

Investigators in this study sought a better understanding of the phenomenon of schizotaxia. Schizotaxia is associated with negative symptoms, neuropsychological dysfunction, and structural and functional brain abnormalities in 20% to 50% of nonpsychotic relatives of schizophrenics.

A longitudinal study was conducted of the children of schizophrenic parents and controls. Using 30 children of schizophrenics and 50 children of the control group, assessments of their personality and psychopathology across multiple domains were completed.

Children of schizophrenic parents showed more delinquency, externalizing behavior, physical anhedonia, and less social competence than the children of the controls. Preliminary data support the presence of hypothesized deficits in nonpsychotic teens prior to the actual onset of symptoms.

It is important to monitor high-risk children for the presence of schizotaxia, given their genetic loading for the development of schizophrenia. Tracking these high-risk individuals longitudinally will allow for the determination of the best measures to use to predict future development of schizophrenia.

Olanzapine in Adolescents With Schizophrenia[3]

This study provides preliminary results of the treatment of young patients with schizophrenia who have been prescribed olanzapine. An open-label multicenter trial of adolescents and young adults (aged 12-21 years) diagnosed with schizophrenia (DSM-IV) were treated with olanzapine (5 to 20 mg/day). Once 50 patients had completed 6 weeks of olanzapine therapy (or dropped out), interim safety analyses were conducted.

During the 6-month observation period, 35 of the 100 patients who entered the study had completed it (80 had reached week 6). The response rate was 60% (N-600/100). Interim safety analyses (51 patients) showed that the mean length of olanzapine treatment (mean maximum dose, 16.5 mg/day) was 95 days. Two patients had serious adverse events (AE) and required rehospitalization. Weight gain (n = 11; 22%) was the most commonly reported AE. Increased hepatic enzymes (n = 10; 22%) were also reported. Also documented were changes in leukocytes (n = 3; 6%) and neutrophils (n = 1; 2%). The mean weight gain was 4.4 kg. Mean change in Simpson-Angus score was -0.6.

This study proved to be a feasible trial of treating adolescents with olanzapine. The patients tolerated this medication fairly well, with the exception of a few drop-outs due to AEs. Additional studies will offer valuable information for this young population.

Gray Matter Deficits in Schizophrenia[4]

Previous studies of schizophrenia with a childhood onset have confirmed that there are structural brain abnormalities that may be related to the symptoms of the disorder. Researchers from UCLA conducted a study to assess gray matter, white matter, and cerebrospinal fluid (CSF) volume differences in the cerebral lobes. The scientists studied 16 children with a mean age of 11.7 years who were screened with the Schedule for Affective Disorders and Schizophrenia for School Age Children Present and Lifetime Version (K-SADSPL), given a clinical interview, and evaluated as meeting DSM-IV criteria for childhood-onset schizophrenia. The control group consisted of 17 healthy children with a mean age of 11.3 years.

All of the subjects completed T-1 weighted MRI scans. Results of the study suggest that subjects with childhood onset schizophrenia (COS) have significantly more CSF in the left temporal lobe, right frontal lobe, left occipital lobe, and right parietal lobe. There was also significantly less gray matter in the left frontal lobe and bilaterally in the occipital lobe in COS subjects. The results are interesting and certainly require additional research but point to significant markers in children with COS.

References

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