Detection of New-Onset Decline in SMI

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Definitions of SCZ and Major NeuroCognitive Disorders

- **SCZ**
  - Six Month Duration of disability
  - Decline from Higher Functioning
  - Not caused by medical illness or mood disorder

- **MND**
  - Documented Cognitive impairments
  - Disability and decline from higher functioning
  - Not caused by delirium or mood disorder
Cognitive Functioning in Schizophrenia

- Even in first episode patients there are multiple aspects of cognitive impairment

- Patients with schizophrenia perform poorly across ability domains
  - Working and Episodic memory
  - Executive functioning
  - Attention and Processing Speed

- These impairments can be substantial at the time of the first episode

- Cognitive functioning is a major predictor of overall adaptive outcome
Level of Impairment at First Episode prior to treatment

FIGURE 1. Deficits in Scores for Neuropsychological and Premorbid Abilities of 94 Patients With First-Episode Schizophrenia


*Relative to scores for healthy comparison subjects; by definition, the healthy comparison group had a mean score of zero on each scale. Premorbid ability score based on tests of general knowledge, vocabulary, and reading skill. The straight horizontal line indicates the average deficit for patients across scales (~1.53).
Stability of Cognitive Impairment

- One of the hallmark features of cognitive functioning in schizophrenia is stability of impairment.
- Even 20-year follow-ups find modest changes.
- Normative performance is not worse when older.
20-Year Change in Cognitive Functioning

Annualized global change: -.01 SD/Year for fluid; +.01 SD for crystallized
No Cross-Sectional Difference in Normative Performance Across the lifespan

Eyler Zorrilla LT, et al. 
*Am J Psychiatry.*
Reports of Dementia in SMI

- 74,170 individuals with a diagnosis of schizophrenia
- At 66 years of age, the prevalence of diagnosed dementia was 27.9% among individuals with schizophrenia compared with 1.3% in the group without SMI. By 80 years of age, the prevalence of dementia diagnoses was 70.2% in the group with schizophrenia and 11.3% in the group without SMI.
It may be dementia, but it is not AD


- Although 72% of the patients with schizophrenia showed cognitive impairment, AD was diagnosed in only 9% of the patients and other dementing diseases were diagnosed in only 4% of the patients.

- In the 87 cases lacking a neuropathologic diagnosis of AD or other dementing disorders, the mean (+/-SD) Clinical Dementia Rating Scale score was 2.21 (+/-1.14), with 43 of the cases scoring 3 or higher.
Cross Sectional Comparison: AD, SCZ, HC

- AD and Schizophrenic patients (n=66) were matched on MMSE scores, age, and relative education
- Healthy controls (n=66) were matched to AD and schizophrenic patients on relative education and age
Comparison of the Severity of Cognitive Deficits in AD and Schizophrenia

- Delayed recall: Schiz > AD
- Delayed recognition: Schiz > AD
- Learning rate: Schiz = AD
- Verbal Skills: Schiz < AD
- Executive Functions: Schiz < AD
- Praxic Skills: Schiz < AD

Davidson et al., 1996
Verbal Learning: Schizophrenia vs. AD vs. HC

Norm>Schiz=AD; p<.05
Delayed recall Savings: Schiz vs. AD vs. HC

Norm > Schiz > AD; p < .05
Delayed Recognition Discrimination

Norm=Schiz>AD; p<.05

Patients with schizophrenia (N=107) were followed over 6 years and assessed with the Clinical Dementia Rating and the Mini-Mental State Examination. The schizophrenic subjects were compared to 136 healthy comparison subjects and 118 Alzheimer's disease patients age 50 and older who were assessed over a similar follow-up period.
Course of CDR and MMSE
What does this mean?

- Cognitive impairment is present over the lifespan in SMI and is “discovered” at assessments in later life, leading to high prevalence that is not consistent with postmortem or cognitive data.
- Often clinicians making the discovery are not familiar with how severe cognitive impairments are in SMI.
- Longitudinal rapid cognitive decline is limited to a small subset and they are generally very old.
How do you assess for new onset impairment?

- Focus on longitudinal information that suggests either stability or significant decline in a short term (e.g., annual) basis.
- Neuropsychological assessment if delivered should focus on delayed recall, particularly development of impairment in delayed recognition memory which is a hallmark of cortical dementia.
- Informants who know the patients well are required. Although cognitive and functional performance manifests considerable day to say stability in older schizophrenia patients, people with SMI can have a bad day.
- View older people with schizophrenia and bipolar disorder similarly, in that cognitive impairments differ in their severity but have very similar profiles across the conditions. Further, long-term follow studies of bipolar illness find not remitting and non-exacerbating deficits over time.
- Ensure that exacerbating cognitive deficits are not due to anticholinergic burden, to which people with SMI become more sensitive as they age.