Meeting the Challenges in Caring for Patients With Schizophrenia: Roles of the Pharmacist

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Objectives

- Evaluate the challenges of caring for a patient with schizophrenia, considering and recognizing:
  - Maximizing treatment benefit
  - The goals for recovery
  - That remission is unrealized in most patients

- Identify important considerations in monitoring wellness in patients with schizophrenia

- Discuss the evolving role of the pharmacist in caring for patients with schizophrenia

- Review new and emerging research in treating patients with schizophrenia
IMPACT OF SCHIZOPHRENIA
Goals of Treatment for Patients With Schizophrenia

- **Acute phase**
  - Prevent harm
  - Control disturbed behavior
  - Determine and reduce the severity of psychosis and associated symptoms
  - Address the factors that led to the occurrence of the acute episode
  - Effect a rapid return to the best level of functioning
  - Develop alliance with the patient and family
  - Formulate short- and long-term treatment plans
  - Connect the patient with appropriate aftercare in the community

- **Maintenance phase**
  - Consolidate gains of acute therapy
  - Prevent recurrence of illness, maintain response
  - Maintain medication adherence
  - Systematically evaluate the appropriateness/effectiveness of adjunctive therapies
  - Evaluate and address residual symptoms

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The Theoretical Course of Schizophrenia Progression May Lead to Functional Decline\textsuperscript{1-4}

<table>
<thead>
<tr>
<th>Genes and developmental risk factors</th>
</tr>
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<tbody>
<tr>
<td>Symptoms Accelerate</td>
</tr>
<tr>
<td>First Episode</td>
</tr>
<tr>
<td>Diagnosis</td>
</tr>
<tr>
<td>Relapse</td>
</tr>
<tr>
<td>Illness-driven decline in functioning plateaus</td>
</tr>
</tbody>
</table>

Clinical deterioration may begin early and can occur throughout the first 5–10 years after first episode.

A long period of untreated psychosis has correlated with poor prognosis.

Number of relapses may be related to greater deterioration.


Symptoms, Level of Functioning

Mild

Severe

Premorbid

Prodromal

Psychotic

Residual

Childhood

Adolescence to early adulthood

Approximately 2-5 years

Critical years

Approximately 5 years

Remainder of life

Symptoms, Level of Functioning
# Current Standard of Care for Patients With Schizophrenia Characterized by Impact and Limitations of Treatment

<table>
<thead>
<tr>
<th>Antipsychotic Classification</th>
<th>Functional Impact</th>
<th>Treatment Limitations</th>
</tr>
</thead>
</table>
| **First generation (Typical)** | - Decrease frequency and severity of psychotic episodes  
- Improve functional capacity | - Adverse events (EPS)  
- Suboptimal outcomes |
| **Second generation (Atypical)** | - Dopamine D₂-receptor antagonism/partial agonism  
- Serotonin 5HT₂A antagonism and 5HT₁A partial agonism | - No clear superiority over first-generation medication in improving positive, cognitive, and social outcomes  
- Adverse events (metabolic, weight gain, sedation, agranulocytosis) |}

5-HT, serotonin; D, type of dopamine receptor; EPS, extrapyramidal symptoms.

WELLNESS IN SCHIZOPHRENIA: ARE CLINICIANS SUCCEEDING?
Mortality in Patients With Schizophrenia

- Two- to three-fold increase in mortality risk as a result of suicide and cardiovascular and metabolic diseases\(^1\),\(^*\)
- A meta-analysis\(^\dagger\) found that 1 in 3 patients with schizophrenia had comorbid metabolic syndrome\(^2\)
- Nonadherence remains a global challenge in psychiatry that has been linked to all-cause mortality\(^4\)

\(^*\) In patients with schizophrenia compared to the general population
\(^\dagger\) Meta-analysis of studies of men and women diagnosed with schizophrenia using the ATP III, ATP III-A or IDF diagnostic criteria

![Prevalence of Metabolic Dysregulation in Patients with Schizophrenia (n=689)](image)

THE EVOLVING ROLE OF THE PHARMACIST IN THE TREATMENT OF PATIENTS WITH SCHIZOPHRENIA
Pharmacist Interventions Can Be Beneficial in Polypharmacy

- The integration of pharmacists into the treatment team has demonstrated several benefits, especially in cases involving polypharmacy
  - A study was conducted across 3 sites in rural West Virginia
  - Expanded the use of clinical pharmacists to include drug utilization reviews (DUR) with recommendations to primary care provider for dual eligible patients
  - Patients were on more than 15 chronic medications per day
  - After the DUR, there was a 5.5% reduction in total medications, and a 14.8% reduction in medications on the Beers list.

**Medications Before and After Clinical Pharmacist Intervention**

- Total Medications
- Beers Medications

![Figure adapted from: Doyle D et al; 2016](image-url)
Pharmacists Can Fill Voids in Patient Care

- Treating serious mental illness poses many challenges for clinicians
  - Primary care clinicians\(^1\)
    - May lack the skills to treat this population
    - Time constraints
  - Psychiatrists\(^1,2\)
    - May not believe physical health is their responsibility
    - May lack physical medicine skills
    - Shortage of psychiatrists
- Pharmacists may help bridge some of the gaps and needs of primary care and health care systems\(^3\)

Top Actions Taken by Pharmacists to Resolve Medication-related Problems (Excluding Education)\(^4\)

- Change Dose or Drug Interval: 14,981
- Add Medication: 5554
- Order Test: 4230
- Discontinue Medication: 3847
- Substitute Medication: 2665

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Potential Roles of the Pharmacist in Improving Medical Risk Management Strategies of Antipsychotic-treated Patients

**Treatment Initiation**
- Healthy lifestyle counseling
- Healthy lifestyle intervention
- Start with lower-risk antipsychotic

**If Adverse Effect Is Present**
- Healthy lifestyle counseling/intervention
- Consider changing to lower-risk antipsychotic
- Consider weight loss intervention

**If Adverse Effect Progresses/Serious**
- Healthy lifestyle counseling/intervention
- Considering changing to lower-risk antipsychotic
- Add targeted treatment for pathological values
- Consider referral to specialist

Correll CU. CNS Spectr. 2007;12(10) (suppl 17):12–20,35.
NEW AND EMERGING RESEARCH IN THE DIAGNOSIS AND TREATMENT OF PATIENTS WITH SCHIZOPHRENIA:

CHALLENGES AND OPPORTUNITIES FOR HEALTH CARE
Personalized Medicine

“Because of their distinct knowledge, skills, and abilities, pharmacists are uniquely positioned to lead interdisciplinary efforts to develop processes for ordering, interpreting, and reporting pharmacogenomic test results and for guiding optimal drug selection and drug dosing based on those results, as well as efforts to implement and improve those processes.

Pharmacists therefore have a fundamental responsibility to ensure that pharmacogenomic testing is used to optimize medication therapy”

- American Society of Health-System Pharmacists (ASHP)

Future Practice: Associating Biomarkers and Symptomatology of Schizophrenia

- Biomarkers are defined as: “A characteristic that is objectively measured and evaluated as an indicator of normal biologic processes, pathogenic processes, or pharmacologic responses to therapeutic intervention”

- Blood biomarkers may be associated with specific symptoms in schizophrenia, including:
  - Psychosis (e.g., hallucinations, delusions)\(^2\)
  - Depressive symptoms\(^3,\ast\)

- Neuroimaging modalities may be able to associate specific brain neurocircuitry with cognitive and negative symptoms\(^4\)

- Early-phase biomarker evaluation may promote successful development of novel antipsychotics and/or more targeted therapeutics\(^5\)

\(*\) As determined by the Calgary Depression Scale for Schizophrenia.

Pharmacists and Personalized Medicine in Psychiatry

• Clinical pharmacogenomics (PGx) is utilized to:
  – Guide optimal drug selection and dosing
  – Work to maximize therapeutic effects and minimize toxicity

• Predictive genetic testing may help identify at-risk individuals for early intervention

Pharmacists’ Functions in Clinical PGx

• Using PGx results to design patient-specific drug and dosage regimens
• Monitoring and adjusting therapy regimens using PGx testing results
• Educating patients and practitioners on appropriate indications for clinical PGx
• Communicating PGx-specific drug therapy recommendations to the health care team

Course of Cognitive Impairment and Treatment in Patients With Schizophrenia\textsuperscript{1,2}

Nonadherence May Contribute to a Downward Spiral of Worsened Prognosis

- Nonadherence, even early and partial, may increase risk of hospitalization, relapse, attempted suicide, and impaired social and occupational functioning in SMI.

Illustration of the potential impact of continued partial or nonadherence on the patient diagnosed with schizophrenia and on the prognosis over time

<table>
<thead>
<tr>
<th>Impact on illness</th>
<th>Duration of nonadherence</th>
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<tbody>
<tr>
<td>Full recovery</td>
<td>Occasional</td>
</tr>
<tr>
<td>Incomplete recovery</td>
<td>Days</td>
</tr>
<tr>
<td>Symptom exacerbation</td>
<td>Weeks</td>
</tr>
<tr>
<td>Relapse</td>
<td>Months</td>
</tr>
<tr>
<td>Danger to self/others</td>
<td></td>
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</tbody>
</table>

Potential impact on patient

- Full recovery
- Loss of confidence
- Demoralization
- Loss of job
- Family discord
- Rehospitalization
- Danger to self/others

Adapted with permission from Keith SJ, Kane JM. J Clin Psychiatry. 2003;64(11):1308–1315.


SMI, serious mental illness.
CLOSING