



Clinician's Guide to the Assessment and Management of Psychosis in Adult Persons with Mental Retardation and Developmental Disabilities (MR/DD)

1. Overview

Psychosis is the inability to distinguish internally generated mental perceptions from physical external reality. Common symptoms of psychosis include hallucinations, delusions, and paranoia. Delusions are defined as fixed false beliefs with no basis in fact. Delusional symptomology usually requires sufficient psychological ability to construct false perceptions. Paranoia is a pervasive sense of suspicion or fear not warranted by circumstances (1). Hallucinations can occur in all sensory modalities including touch and visceral sensation; however, most are present in the auditory and visual sensory systems. Different types of hallucinations suggest different underlying causes (See Table 1). Hallucinations tend to occur more frequently in impaired sensory systems, e.g., visual hallucinations in a person with cataracts. Hallucinations are produced by many clinical conditions including delirium, seizures, substance abuse and others (See Table 1). Hallucination-like experiences can occur during the initial phase of sleep and awakening process termed “hypnagogic” and “hypnopompic” hallucinations. Illusions are misinterpretations of real sensory stimuli, e.g., misidentifying lint as insects. Illusions can occur in a range of clinical settings including delirium or sensory impairment (2), (3).

Table 1
Hallucinations in Mental Retardation

Type	Clinical Features	Likely Clinical Setting
Auditory	Voices, music, sounds	All
Visual	Defined or vague images	All
Olfactory	Smell	Seizures
Tactile	Peculiar feeling on the skin	Delirium, substance abuse
<i>All includes medical problems, such as depression, delirium, dementia, intoxication and others (1).</i>		

The assessment of psychosis in nonverbal patients requires behavioral observation. The behavior analysis team can assist with this process and provide detailed observational information. Patients may respond to nonexistent stimuli by becoming agitated or manifesting self-injurious behavior (SIB), such as head-hitting in response to auditory hallucinations.

Since psychosis is a disorder of thought, the level of intellectual function determines the form of psychotic symptoms as well as the possibility that such symptoms exist. Substantial controversy exists among clinicians as to whether psychosis can occur in patients with severe mental retardation who may not thoroughly understand or perceive their environment under normal circumstances. Delusions are unlikely to occur in severe or profoundly mentally retarded individuals. Paranoia is difficult to identify in persons with severe retardation. Psychosis is more common in certain clinical circumstances (See Table 2), (4), (5).

Table 2
Risk Factors for Psychosis in Patients with MR/DD

1. Advanced Age
2. Seizures
3. Manic Depressive Illness
4. Institutional Care

2. Epidemiology

The epidemiology of psychotic symptoms in the general population as well as in persons with intellectual disability depends upon the age. Psychotic symptoms are reported in over 5% of intellectually normal children and adolescents and 10% of cognitively intact persons over the age of 85 (1). The rates of psychosis in adults probably range from 1-3%. The rate of schizophrenia in the population with MR/DD ranges from 2-4.4% with an age-dependent distribution. Psychotic symptoms vary according to the level of intellectual function of groups with MR/DD with peak frequency occurring in the 20-35 IQ range (6); however, the symptoms persist across all age groups (See Table 3). Schizophrenia and psychotic symptoms are most commonly identified in individuals who reside in a facility or institutional setting (See Table 4).

Table 3

Psychiatric Morbidity Based on Intellectual Function (7)

IQ	Abnormal Behavior %	Schizophrenia or Psychosis %
85-68	10	3.3
67-52	6.5	3.9
51-36	15.3	2.4
35-20	11.8	11.8
19-0	0	32

ACTA PSYCH SCAND 1985, 72:563-570

Table 4

Prevalence Rates for SMI in Patients with Developmental Disabilities Based on Residence (7)

	<u>Schizo (%)</u>	<u>Behavior(%)</u>	<u>Dementia(%)</u>
Home	0	6.7-7.1	1-1.8
Community-based Facility	0-2.6	10.5-14.3	4.8-5.3
Institution	2.6-7.1	14.2-16.9	3.6-21.4

ACTA PSYCH SCAND 1985, 72:563-570

3. Differential Diagnosis and Clinical Assessment

The clinical assessment of psychosis in the patient with MR/DD requires a biomedical psychosocial approach. The differential diagnosis for new onset psychotic symptoms includes schizophrenia, psychotic mood disorder, substance abuse, delirium, new onset medical or neurological problems, and dementia in the older patient (See Table 5). Schizophrenia is a specific clinical syndrome with psychotic symptoms, as well as psychosocial decline that occurs during or after adolescence in normal persons. Patients of normal intellect with schizophrenia manifest psychiatric, cognitive, and neurological problems, as well as psychosocial dysfunction. The applications of these diagnostic criteria to moderate or severely retarded individuals create immediate problems because many subjects have poor psychosocial function in addition to their impaired cognition. Significant numbers of patients with schizophrenia manifest borderline intellectual function. The “low IQ” schizophrenic patient may present initially through the mental retardation system and likewise patients with severe schizophrenia may actually suffer from mild mental retardation (7).

Table 5
Differential Diagnosis for Potential Cause of Psychosis in Persons with DD/MR by Age Groups

<i>Potential Cause</i>	Common Age	
	Young Adult	Over Age 50
1. <i>Delirium</i>	✓	✓
2. <i>Mood Disorder</i>	✓	✓
3. <i>Schizophrenia*</i>	✓	∅
4. <i>Substance Abuse*</i>	✓	∅
5. <i>Dementia</i>	∅	✓
6. <i>Severe Stress</i>	✓	✓

✓ = can be seen ∅ = rare or never
 *New Onset

The application of DSM criteria for schizophrenia to persons with mental retardation has not been validated by the usual documentation process. The DSM diagnostic criteria for schizophrenia may not fully apply to the severely mentally retarded person (1).

The abrupt onset of psychotic symptoms in the mentally retarded person should suggest delirium, other mental problems or substance abuse in the mildly retarded individual. Psychotic symptoms can occur in the setting of depression and mania; however, these individuals generally manifest symptoms of mood disorder prior to the onset of psychotic symptoms. Psychosis can occur in the older person with mental retardation in the form of dementia. For instance, the new onset of psychotic symptoms in an older person with Down’s syndrome might suggest the onset of Alzheimer’s disease. Psychotic symptoms may occur as part of the natural history of certain types of mental retardation caused by progressive, degenerative disorders, e.g., Wilson’s disease, adrenoleukodystrophy, etc. Certain genetic disorders such as velocardiofacial syndrome have increased risk for psychosis (8).

The psychological assessment of psychosis involves the determination of whether specific psychological stressors, such as seen with post traumatic stress disorder, precipitate the psychotic symptoms. The medical evaluation of psychosis involves the search to exclude medical and neurological causes of the psychotic symptoms. Psychosis associated with depression often produces negativistic delusions and hallucinations, e.g., voices talking about death (**See Table 1**). Toxicity associated with a range of non-psychotropic medications can produce hallucinations, e.g., digitalis toxicity. Olfactory hallucinations can occur as part of epilepsy since temporal lobe seizures are often preceded by a noxious smell. Persons with mild retardation may ingest hallucinogens, psychostimulants or other illegal drugs that can produce psychotic symptoms. Specific social stressors may produce peculiar ideas, e.g., change of environment, death of caregiver.

The assessment of psychosis focuses on excluding psychiatric disorders such as mania, depression, and substance abuse. The abrupt onset of psychotic symptoms requires a careful evaluation for delirium (**See DDMED 38**). Patients with epilepsy have greater risk for developing psychotic symptoms and individuals with temporal lobe seizures have the greatest risk for developing schizophrenic-like syndromes (**1**). Medical problems can produce or worsen hallucinations (**9**). Hypoxia, hypoglycemia, electrolyte abnormalities and other metabolic problems can produce hallucinations. The new onset of hallucinations requires a complete physical and neurological examination, as well as assessment of basic laboratory values.

Once there is reasonable certainty that there are no medical explanations for the behaviors/symptoms of concern, an assessment of psychotic symptoms should be conducted. Individuals with intellectual disabilities are more likely to have behavioral manifestations of psychotic symptoms when they occur and these patients are often less capable of giving a sophisticated description of their experiences. Some assessment tools designed to identify these psychiatric symptoms in individuals with intellectual disabilities include the DASH-II (Diagnostic Assessment for the Severely Handicapped – II), the ADD (Assessment of Dual Diagnosis), and the REISS Screen. These instruments have taken symptoms for the various diagnostic categories in the DSM and translated them into descriptions of behaviors that have been associated with particular diagnostic categories. This kind of assessment can also help sort out which behaviors are manifestations of a psychotic disorder and which behaviors are a result of learning.

Functional behavioral assessments need to be conducted for the latter when identified (10), (11).

4. Management of Psychosis

The management of psychosis depends upon the etiology of the psychiatric symptoms. Management of the underlying causes of new medical problems, delirium, mania, depression, and substance abuse requires specific therapy. Schizophrenia or psychosis produced by other disorders such as mania or depression may require the use of antipsychotic medications. The prescription of antipsychotic medications must balance the expected benefit versus the expected side effects produced by these medications (See **DDMED 39**).

a) Medication

Antipsychotic medications should be prescribed for persons with persistent distressing psychotic symptoms or when the psychosis precipitates dangerous or disruptive behaviors. Acute psychosis may produce acute agitation that requires injectable medications (See **Table 6**). Antipsychotic medications can be used when psychosis disrupts habilitative services necessary to sustain or improve the patient's quality of life (See **Table 7**). Psychotic symptoms that produce no distress or dysfunction can be managed through behavioral interventions or simply ignored.

Table 6
Common Dosing Ranges of Injectable Medications for Acute Agitation in the Adult
MR/DD Patient Produced by Psychosis
 (Dosing Range in Milligrams)

MEDICATION	FRAIL or OLD (mg)	HEALTHY (mg)	CAUTION See PDR
Haldol (haloperidol) ¹	0.5 to 2.5	1 to 5	Acute EPS
Zyprexa (olanzapine) ²	2.5 to 5	2.5 to 10	Hypotension
Geodon (ziprasidone) ³	5 to 10	10 to 20	Cardiac Toxicity
¹ May give Haldol every two hours for a total of four doses in 24 hours. ² May give a total of three doses of Zyprexa per 24 hours. Second dose may follow first dose by 2 hours and the third dose may be administered four hours after the second. ³ May repeat Geodon once in 2 to 4 hours for a total of two doses in 24 hours. These values are suggested dosing ranges. Each patient should be individually assessed and dosing adjusted to that individual's clinical circumstances. Consult a child psychiatrist for treatment of children and adolescents. All IM dosing is individualized. See PDR for complete information.			

Table 7
Summary of Typical Oral Dose Ranges of Antipsychotic Medication Prescribed for the Adult Population with MR/DD

Drug	Healthy/Adult Daily Dose minimum/maximum	Frail or Elderly Daily Dose minimum/maximum	Major Advisory See PDR for Complete Information
1st Generation Medications			
Chlorpromazine	25-1000mg	10-200mg	Anticholinergic Side Effects
Thioridazine	25-500mg	10-150mg	Blackbox Cardiac Warning
Haloperidol	1.0-30mg	0.5-5.0mg	High Potential for EPS/TD
Fluphenazine	1-20mg	1-5mg	High Potential for EPS/TD
2nd Generation Medications			
Clozapine	100-600mg	25-300mg	Black Box for Agranulocytosis
Risperidone	1-4mg	0.25-3.0mg	Dose-related EPS
Olanzapine	5-20mg	2.5-10mg	Sedation and Metabolic Issues
Quetiapine	25-800mg	25-200mg	Sedation and Hypotension Possible
Ziprasidone	20-160mg	20-80mg	Cardiac Warning
3rd Generation Medications			
Aripiprazole	5-30mg	5-20mg	Akathisia and/or withdrawal Dyskinesia Possible
ABBREVIATIONS: EPS – Extrapyramidal Symptoms TD- Tardive Dyskinesia These ranges are not prescriptive guidance and clinicians must individualize doses for each patient. Consult a child psychiatrist for treatment of children or adolescents. See PDR for complete information.			

The consensus criteria for use of antipsychotic medications in persons with MR/DD support the initial use of second or third generation antipsychotics medication (10), (11), (12), (13). Older, first generation antipsychotics can be used when new medications are not effective. Paranoid or delusional patients may refuse to take antipsychotic medications and these individuals may require the administration of long-acting, injectable preparations such as Haldol, Prolixin or Risperidone (See Table 8) and (See DDMED 39 Antipsychotic Medication Handout).

Acute, psychotic symptoms are best managed by injectable or dissolvable antipsychotics including Zyprexa and Risperidone. Brief treatment with old antipsychotics such as injectable Haldol can be employed to manage acute psychotic symptoms; however, long-term therapy produces a substantial risk for tardive dyskinesia. Polypharmacy is rarely indicated and studies are not published

to document safety and efficacy of using two antipsychotic medications at the same time.

Table 8
Summary of Injectable, Long-Acting Preparations (Depot Preparations) of Antipsychotic Medications for the Adult Person with MR/DD
 (Dosing Range in Milligrams - Given Every 2 Weeks)

INTRAMUSCULAR MEDICATION	IM DOSE RANGE FOR FRAIL/ELDERLY (mg)	IM DOSE RANGE FOR HEALTHY (mg)
Haloperidol (Haldol decanoate) <i>every two weeks</i>	12.5 to 25	12.5 to 75
Perphenazine (Prolixin decanoate) <i>every two weeks</i>	2.5 to 25	12.5 to 50
Risperdal Consta <i>every two weeks</i>	25	25 to 37.5
Dose may be titrated downward by decreasing frequency of injection to every three or four weeks. These values are suggested general guidance. Each patient should be individually assessed and dosing adjusted to that individual's clinical circumstances. Consult a child psychiatrist for treatment of children or adolescents. See PDR for complete information.		

b) Behavioral Intervention

Psychotic symptoms often worsen behavioral problems, e.g., SIB, aggression. A behavioral management program is indicated to manage these symptoms until medications reduce patient distress. Non-verbal patients require monitoring of behavioral symptoms for psychosis to measure symptom reduction.

Behavior analytic procedures can be included with other treatment modalities for a person who has both a psychiatric diagnosis and intellectual disabilities. Behavioral specialists can determine appropriate training strategies to assist a person with intellectual disabilities to gain better coping skills for dealing with their psychiatric symptoms. Triggers for the symptoms can be identified and strategies taught to staff, family members, and the individual to prevent escalation of the behavioral symptom. Counseling can be provided, keeping in mind that discussions need to be geared toward the level of understanding of the individual. Most counseling should take the form of skill-building and include the chance for positive reinforcement during the learning process. For example, if an individual becomes angry easily due to an impulse control problem, anger management training may be successful when presented in simplistic terms, modeled by the clinician, and practiced repeatedly by the individual in more than one or two sessions. As the person learns the management techniques, positive reinforcement should be delivered to assist with the acquisition and maintenance of the skills.

c) Assessing Clinical Outcomes

The therapeutic endpoint is reduction of symptoms as described by the patient and caregiver or as measured by behavioral monitoring. Mildly retarded patients can describe symptomatic changes produced by medications or behavioral interventions. The clinician must depend on behavioral symptoms to determine efficacy in severely retarded persons. Minimal behavioral monitoring requires consistent measurements over several days of observation (See Table 9).

Table 9
Methods of Assessing Therapeutic Benefit of Antipsychotic Medications

Severity of Mental Retardation	Self-Reporting by Patient	Caregiver Reporting	Behavioral Monitoring
Mild	R	R	H
Moderate	H	R	R
Severe/Profound	U	R	R

R=Required H=Helpful, but not always required U=Unreliable

d) Family or Caregiver Education

Hallucinations are quite real to the individual who experiences the false perception and delusions seem like credible facts. Family should not confront or argue with the psychotic person. Family should provide generic reassurance, distraction, and refocus the individual on other issues. Staff should not promote or encourage the psychotic thought but rather distract and redirect the patient.

5. Expected Outcome

The expected outcome depends on the cause of the psychiatric symptoms. Hallucinations produced by reversible disease, such as delirium and depression, will improve with treatment of the underlying disease. Hallucinations produced by mania will often reoccur with manic relapse. Many schizophrenic patients will have persistent hallucinations, especially with comorbid seizure disorders. The therapeutic goal may be symptomatic and functional improvement rather than total eradication of psychotic symptoms.

REFERENCES

1. Kaplan HI, Sadock BJ, eds. *Comprehensive Textbook of Psychiatry/V*, Baltimore: Williams & Wilkins, 1989.
2. Summers J, Boyd K, Morgan J. Evaluating patients with intellectual disabilities and comorbid mental health problems. *Psychiatric Annals* 2004;34(3):215-220.
3. Silka VR, Hauser MJ. Psychiatric assessment of the person with mental retardation. *Psychiatric Annals* 1997;27(3):162-169.
4. Sanderson TL, Best JJK, Doody GA, et al. Neuroanatomy of comorbid schizophrenia and learning disability: a controlled study. *Lancet* 1999;354:1867-71.
5. Deb S, Thomas M, Bright C. Mental disorder in adults with intellectual disability. I: Prevalence of functional psychiatric illness among a community-based population aged between 16 and 64 years. *Journ of Intellec Dis Research* 2001;45(6):495-505.
6. Lund B. The prevalence of psychiatric morbidity in mentally retarded adults. *Acta Psychiatr Scand* 1985;72:563-570.
7. Gogtay N, Giedd J, Rapoport JL. Brain development in healthy, hyperactive, and psychotic children. *Arch Neurol* 2002;59:1244-1248.
8. Moldavsky M, Lev D, Lerman-Sagie T. Behavioral phenotypes of genetic syndromes: a reference guide for psychiatrists. *J Am Acad Child Adolesc. Psych* 2001;40(7):749-761.
9. Kastner T, Walsh KK, Fraser M. Undiagnosed medical conditions and medication side effects presenting as behavioral/psychiatric problems in people with mental retardation. *Mental Health Aspects of Developmental Disabilities*, July/August/September 2001;4(3):101-107.
10. Special Issue. Expert Consensus Guidelines Series: Treatment of psychiatric and behavioral problems in mental retardation. *American Journal on Mental Retardation* 2000;105(3):165-188.
11. Reiss S, Aman MG. The international consensus process on psychopharmacology and intellectual disability. *Journal of Intellectual Disability Research* 1997; 41(6):448-455.
12. Antochi RM, Stavrakaki C. Determining pharmacotherapy options for behavioral disturbances patients with developmental disabilities. *Psychiatric Annals* 2004;34(3):205-211.
13. Mikkelsen EJ, McKenna L. Psychopharmacologic algorithms for adults with developmental disabilities and difficult-to-diagnose behavioral disorders. *Psychiatric Annals* 1999;29(5):300-314.