Suzanne Clifford

Better Management of Psychoses in the Elderly

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Better Management of Psychoses in the Elderly

4 Hours Category 1

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Ronald J. Koshes, M.D.	Assistant Clinical Professor of Psychiatry, Georgetown University
Alan P. Siegal, M.D.	Associate Clinical Professor of Psychiatry Yale University School of Medicine
Sumer Verma, M.D.	Psychiatrist in Charge of Dementia Services, McLean Hospital

OBJECTIVE

By actively participating in this meeting, attendees will consider advances in the diagnosis and treatment of geriatric psychoses leading to enhanced patient outcomes.

AGENDA

7:30 a.m.-8:30 a.m.	Registration/Continental Breakfast
8:30 a.m.-10:00 a.m.	**Enhancing Diagnosis of Psychoses in the Elderly**
10:15 a.m.-11:45 a.m.	**Improving Patient Outcomes in Geriatric Psychoses**
11:45 a.m.-12:30 p.m.	Faculty Panel/Question-and-Answer Period

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*Not all speakers will appear at each meeting. Faculty subject to change without notice.

Key Slides

Enhancing Diagnosis of Psychoses in the Elderly

Objectives of Discussion

- What are the causes of late-life psychosis?
- How does late-life psychosis present?
- Assessment of behavioral disturbance in older patients
- Managing behavioral disturbances
  - Nonpharmacological approaches
  - Pharmacological approaches
    - Non-neuroleptic
    - Antipsychotics
- What is the data supporting pharmacological approach?

Presentation of Late-Life Psychosis

- Behavioral disturbance
  - Verbal
  - Vocal
  - Motor
- Psychiatric disturbance
  - Thought disorder
  - Delusions
  - Hallucinations
  - Affective disturbance

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Key Slides

Behavioral Disturbance Results in:

- Social isolation
- Caregiver burnout
- Institutional placement
- Increased use of medication
- Polypharmacy
- Increased risk of falls and injury
- Inappropriate use of restraints

Causes of Late-Life Psychosis

Psychotic Symptoms Can Occur in:

- Dementia
- Delirium
- Affective illness
- Late-onset schizophrenia
- Recurrence of early-onset schizophrenia

Definition

- Alzheimer's disease (AD) is a progressive dementia characterized by a slow decline in memory, language, visuospatial skills, personality and cognition

Cummings & Benson, 1992

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Key Slides

Differential Diagnosis of Dementia

- Causes of dementia can include:
  - Alzheimer's dementia
  - Lewy body dementia
  - Vascular disease (including multi-infarct dementia)
  - Parkinson's disease
  - Pick's disease
  - Huntington's disease
  - Normal pressure hydrocephalus

Differential Diagnosis of Dementia (Cont.)

- Causes of dementia can include:
  - Metabolic disorders, including vitamin B_{12} deficiency, chronic drug intoxication, hypothyroidism and alcoholism
  - Infectious causes including HIV, neurosyphilis and bacterial meningitis
  - Major depression
- The clinical diagnosis of Alzheimer's disease can be made with 85% to 90% accuracy

Epidemiology

- 4 million Americans with AD
- 14 million by year 2050
- 1% of those of age 60-65
- Doubles every 5 years
- 1 in 3 over age 85 with AD
- Death between 3-20 years after onset

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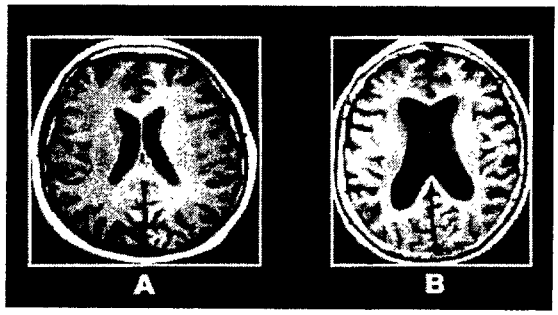
Key Slides

Epidemiology (Cont.)

- 4th leading cause of death after heart disease, cancer and stroke
- 50% of nursing home residents suffer from AD and related conditions
- Cost $100 billion annually
- $174,000 per lifetime
- Majority of the costs borne by caregivers

Imaging Presentations in AD



Reproduced from Doraiswamy PM, 1998

Clinical Presentation

- Memory impairment
- Word-finding difficulties
- Difficulty performing complex tasks (e.g., keeping checkbook, cooking)
- Geographic or temporal disorientation
- Day-night disorientation
- Language deterioration (e.g., empty speech)
- Difficulties with simple chores

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Key Slides

Clinical Presentation (Cont.)

- Troublesome behavior including:
  - Wandering
  - Irritability
- Depression
- Hallucinations, delusions
- Agitation
- Incontinence
- Total dependence on caregivers

Diagnosis of AD Is One of Inclusion

- Diagnosis of AD can be made on basis of typical presentation in majority of cases
- Insidious onset of progressive memory and functional decline in a clear state of consciousness in later life is usually AD

Dementia, Depression, Delirium

	Dementia	Depression	Delirium
Level of consciousness	Alert	Alert	Waxes/wanes
Course	Chronic	Chronic or acute	Acute
Other features	—	Neuro-vegetative signs	Medical causes

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Key Slides

Late-Life Psychotic Symptoms: Psychiatric Causes—Depression

Characteristics of Early-Onset vs. Late-Onset Depression

Feature	Early-Onset	Late-Onset
Family history of depression	Common	Less common
Coexisting medical/ neurologic problems	Uncommon	Common
Cognitive impairment	Rare	Common
Hearing loss	Rare	Common

Adapted from: Addonizio, Alexopoulos. Int J Geriatr Psychiatry. 1993;8:41-47

Synonyms of Delirium

- Organic brain syndrome
- Cerebral insufficiency
- Metabolic encephalopathy
- Acute confusional state
- Toxic psychosis
- Organic psychosis
- Reactive psychosis

Medical Causes of Delirium/Agitation

- UTIs
- Bowel impaction
- Recent onset of illness/surgery
- Recent change in medication/polypharmacy
- Sleep disturbances: primary, secondary
- Chronic/acute pain
- Cardiovascular disease
- Visual impairment
- Poor nutrition
- Respiratory infection

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Key Slides

Medical Disorders Associated with Delirium

- Hypo/hyperglycemia
- Hypo/hyperthyroidism
- Cushing's disease
- Parkinson's disease
- Sodium/potassium imbalance
- B_{12} and folate deficiency
- Sleep deprivation
- HIV
- Alcohol withdrawal

Medications Associated with Delirium

- Anticholinergics (diphenhydramine, TCAs, conventional antipsychotics)
- Steroids
- Sedatives/hypnotics (toxicity/withdrawal)
- Narcotics

Laboratory and Other Exams

- Chem 20, complete blood count (CBC), syphilis, B_{12}, folate, thyroid function tests (TFTs), urinalysis (UA), urine drug screen
- Magnetic resonance imaging (MRI) or computed tomography (CT) at time of diagnosis
- The following are rarely indicated—not as routine:
  - Electroencephalogram (EEG) (sleep-deprived with temporal lobe leads will increase yield)
  - Single-photon emission computed tomography (SPECT)/positron emission tomography (PET)

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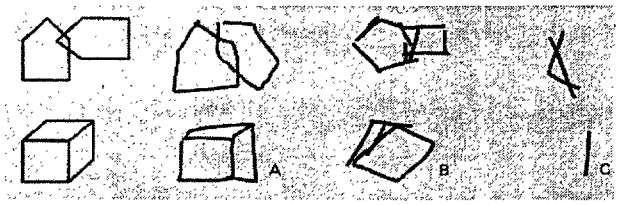
Key Slides

Mini-Mental State Exam (MMSE)

- Not a diagnostic test; use as screening tool
- Scores are influenced by multiple noncognitive factors (age, education, language, culture)
- General rate of decline in AD is 2-4 points/year; rate of decline is dependent on level of severity
- Useful for establishing baseline, assessing treatment response and following patient over time

Progression of Constructional Disturbances in Alzheimer's Disease (AD)



(A) 1 year after onset (B) 3 years after onset (C) 8 years after onset

Neurochemistry

- Decrease in acetylcholine synthesis
- Decrease in the enzyme choline acetyltransferase
- Other neurotransmitter systems likely involved

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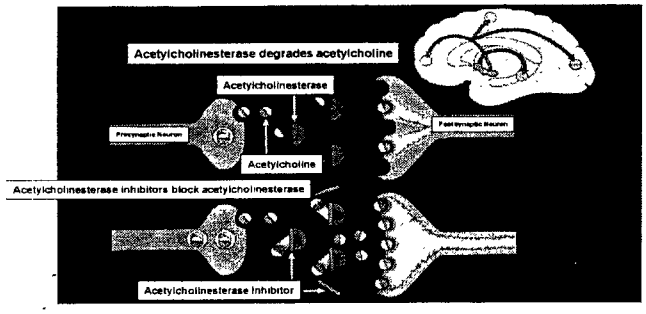
Key Slides

AD: The Cholinergic Hypothesis



FC = frontal cortex; PC = parietal cortex; BF = basal forebrain; H= hippocampus; OC = occipital

Anticholinergic Antidepressant Medications

- Amitriptyline
- Clomipramine
- Doxepin
- Imipramine
- Nortriptyline
- Paroxetine

Anticholinergic Antipsychotic Medications

- Thioridazine
- Mesoridazine
- Chlorpromazine
- Clozapine

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Key Slides

AD Treatment Strategies

Cholinergic Agents

- Initiating treatment
  - Diagnosis: mild-to-moderate AD
  - May improve behavioral disturbances in severe AD
  - Few contraindications
  - Counsel regarding appropriate expectations
- Monitoring response
  - Caregiver report of behavior and function
  - Cognitive test scores
  - Medication side effects

Cholinesterase Inhibitors for AD

- Tacrine (Cognex)*
- Donepezil (Aricept)*
- Rivastigmine (Exelon)
- Metrifonate
- Galantamine (Reminyl)

*FDA approved

Other Possible Interventions for Cognition

- Estrogen
- NSAIDs
- Ginkgo biloba
- Vitamin E

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Key Slides

Agitation and Caregiver Burnout Behaviors

Behaviors

- Physical violence
- Catastrophic reactions
- Hitting
- Making accusations
- Suspiciousness
- Incontinence
- Memory disturbance

Rabins PV. Int Psychogeriatr. 1991;3(2):319-324

Delusions in Alzheimer's Disease

- 30-85% of patients have delusions
- Common beliefs/behaviors
  - Marital infidelity
  - Patients, staff are trying to hurt me
  - Staff, family members are impersonators
  - Personal harm
  - People stealing things
  - My house is not my home
  - Strangers living in my home
  - Misidentification of people
  - People on TV are real

Deutsch LH, et al. Am J Psychiatry. 1991;148(9):1159-1163
Drevets WC, Rubin EH. Biol Psychiatry. 1989;25(1):39-48

What Is "Agitation"?

- Any inappropriate verbal, vocal or motor activity that is not an obvious expression of need
- It is not a diagnostic term but a group of symptoms that can result from a variety of medical or psychiatric conditions

Adapted from: Mansfield C et al. (Various references)

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Key Slides

Ideal Outcomes of Intervention

- Removal of all signs and symptoms of disturbance
- Minimization of side effects
- Compliance with treatment goals
- No recurrences
- Functional reintegration—not behavioral containment

Psychosis and Agitation

Nonpharmacologic Management

- Reassure, distract
- Set-up routines
- Remove offending pharmacologic agents
- Assess and adjust environmental triggers and other potential sources of agitation
- Ensure support for the caregiver and/or staff

- No medication is approved by the U.S. Food and Drug Administration for the treatment of behavioral disturbance in dementia

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Key Slides

Choice of Pharmacotherapy Is Based on:

- Diagnosis
- Target symptoms
- Medication effects
- Medication side effects
- Costs
- Comorbidity

General Principles of Geriatric Pharmacotherapy

- Combine with behavioral intervention
- Treat underlying medical problem
- Start low, go slow—increase only if necessary
- Give medication an adequate trial
- Choose medication based on S/E profile
- Dosing decisions based on patient subtype

Pharmacotherapy

- Anticonvulsants
- Antidepressants
- Trazodone
- Benzodiazepines
- Buspirone
- Acetylcholinesterase inhibitors
- Antipsychotics

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Key Slides

Benzodiazepines

- Minimal efficacy data
- Sedating
- Further inhibit learning and memory
- Cause falls
- Paradoxical disinhibition

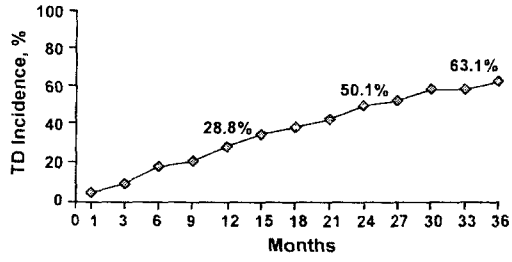
Conventional Antipsychotics

Meta-Analysis of Controlled Trials

- 33 studies: comparison of conventional antipsychotics to placebo or to each other in elderly patients with dementia
- In no study was antipsychotic treatment statistically better than placebo
- Combined analysis showed modest efficacy; 18% of patients did better on antipsychotics than on placebo
- Considerable toxicity was evidenced

Schneider LS, et al. J Am Geriatr Soc. 1990;38(5):553-563

Tardive Dyskinesia in Middle-Aged and Elderly Outpatients (N=439)



Jeste DV et al. Arch Gen Psychiatry. 1995;52:756-765; Jeste DV et al. Am J Psychiatry (In Press)

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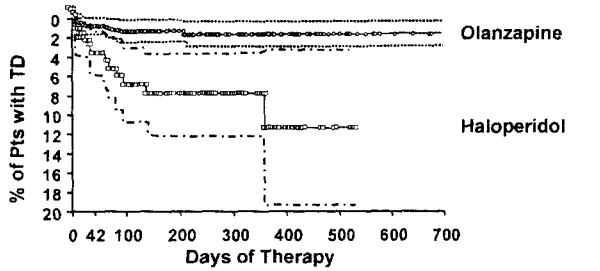
Key Slides

Development of TD Olanzapine- and Haloperidol-Treated Pts*

*1-Yr Incidence†: Olanz = 0.52% (N=513); Hal = 7.45% (N=114)‡

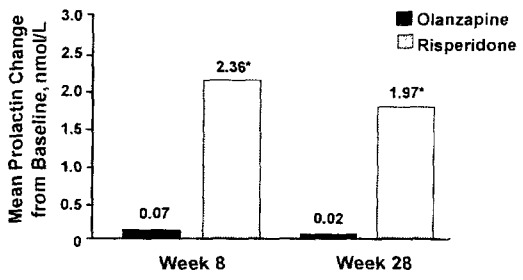


*Double-blind treatment; †Excluding probable withdrawal dyskinesias prior to wk 6; ‡p=.002, Olanz vs. Hal; Beasley et al. Br J Psychiatry. 1999;174:23-30

Clinical Consequences of Hyperprolactinemia

- Sexual dysfunction
  - Diminished libido
  - Decreased arousal
  - Orgasmic dysfunction
  - Impotence
- Reproductive dysfunction
  - Anovulation
  - Chaotic menses
  - Subfertility
  - Decreased estrogen
  - Decreased testosterone
- Breast pathology
  - Galactorrhea
  - Breast enlargement
  - PRL-sensitive dysplasia (?)
- Hypogonadism
  - Bone demineralization
  - Damage to cardiovascular endothelium
  - Behavioral dysfunction
  - Depression
  - Memory deficits
  - Psychopathology

Olanzapine vs. Risperidone in Schizophrenia: Effects on Prolactin



*Risperidone significantly greater than olanzapine; p<.001; Tran et al. J Clin Psychopharmacol. 1997;17:407-418

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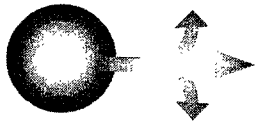
Key Slides

Criteria for a Novel Antipsychotic Drug

Lower incidence of EPS and TD



Broader efficacy profile

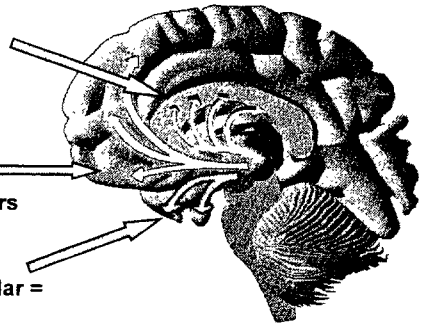
Minimal effect on prolactin levels

Dopamine Pathways

Mesocorticolimbic = Antipsychotic Effect

Nigrostriatal = Movement Disorders

Tuberoinfundibular = Prolactin



Risperidone: Psychosis and Aggressive Behavior in Dementia

- 12-week, randomized, multicenter, placebo-controlled, fixed risperidone dose (0.5, 1, 2 mg/day) study
- 625 patients (hospital or nursing home)
  - 43% female
  - Mean age: 83 ± 8 years

Katz et al. J Clin Psychiatry. 1999(Feb);60(2):107-115

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Key Slides

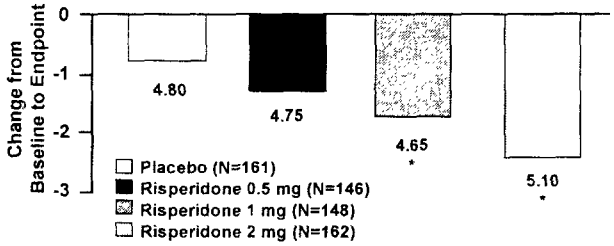
Risperidone: Psychosis and Aggressive Behavior in Dementia (Cont.)

- Diagnoses
  - Alzheimer's dementia: 73%
  - Vascular dementia: 16%
  - Mixed dementia: 11%

Katz et al. J Clin Psychiatry. 1999(Feb);60(2):107-115

Risperidone: Psychosis and Aggressive Behavior in Dementia

Behave-AD Aggressiveness Score



*p<0.05 vs. placebo; Katz et al. J Clin Psychiatry. 1999(Feb);60(2):107-115

Risperidone: Psychosis and Aggressive Behavior in Dementia

	%			
	Placebo (N=163)	0.5 mg/Day (N=149)	1 mg/Day (N=148)	2 mg/Day (N=165)
Injury	37	33	28	32
Edema, peripheral	6	16	13	18
Pain	8	8	3	11
Fever	7	10	7	14
Somnolence	7	10	16	**28**
Agitation	10	7	5	7
Extrapyramidal disorder	7	6	13	**21**

Katz et al. J Clin Psychiatry. 1999(Feb);60(2):107-115

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Key Slides

Risperidone: Psychosis and Aggressive Behavior in Dementia (Cont.)

	%			
	Placebo (N=163)	0.5 mg/Day (N=149)	1 mg/Day (N=148)	2 mg/Day (N=165)
Rhinitis	6	5	6	10
Cough	8	11	5	8
Upper respiratory infection	4	10	7	5
Fall	19	16	13	24
Urinary infection	12	15	12	20
Purpura	12	17	12	10

Katz et al. J Clin Psychiatry. 1999(Feb);60(2):107-115

Risperidone in the Elderly

- Effective therapy
- Significant adverse events >1 mg
- Narrow therapeutic window
- Raises prolactin (? significance in elderly)

Quetiapine in the Elderly

- Efficacy trial in dementia ongoing
- Safety in psychotic disorders in the elderly established (mixed diagnoses)
- Median total dose = 100 mg/day
- Dosing in dementia not established

McManus et al. J Clin Psychiatry. 1999(May); 60(5):292-298

ZY 9371 686

Key Slides

Olanzapine: Psychosis and Agitation in Dementia

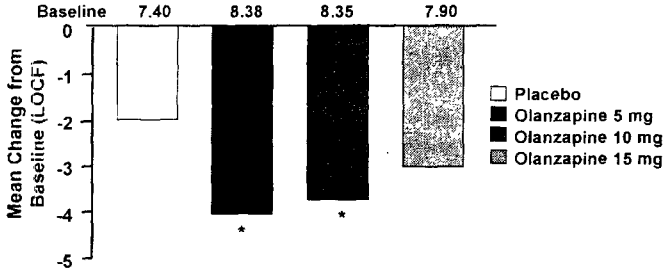
Study Design

- N=206
- Washout and placebo lead in (3-14 days)
- 6-week, double-blind, acute treatment
  - Placebo
  - Olanzapine 5 mg/day
  - Olanzapine 10 mg/day (titration from 5 mg)
  - Olanzapine 15 mg/day (titration from 5 mg)
- 18-week open label: 5-15 mg/day of olanzapine (ongoing, data not available)

Street et al. 3rd Congress of European Federation of Neurological Societies, 1998

Olanzapine: Psychosis and Agitation in Dementia

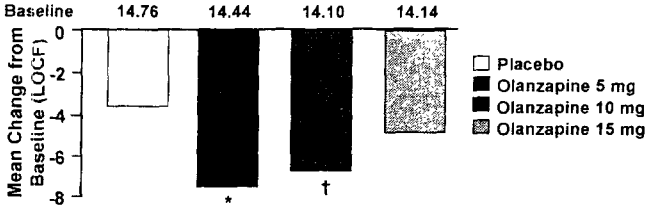
NPI/NH: Agitation/Aggression Item



*p<0.05 vs. placebo; Significantly greater improvement on the agitation/aggression item of the NPI was seen in patients treated with 5 or 10 mg/day of olanzapine compared to placebo; LOCF = last observation carried forward; Street et al. 3rd Congress of European Federation of Neurological Societies, 1998

Olanzapine: Psychosis and Agitation in Dementia

NPI/NH Core Total: Agitation, Delusions, and Hallucinations



*p<0.001 vs. placebo; †p<0.01 vs. placebo; Significantly greater improvement in the sum of agitation, delusions and hallucinations items of the NPI was seen in patients treated with 5 or 10 mg/day of olanzapine compared to placebo; LOCF = last observation carried forward; Street et al. 3rd Congress of European Federation of Neurological Societies, 1998

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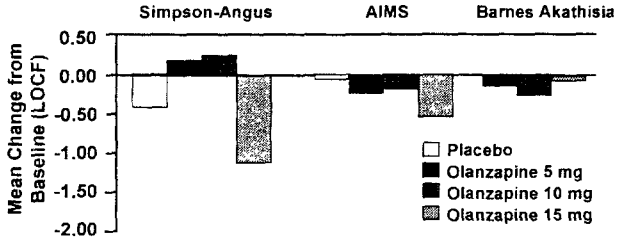
Key Slides

Olanzapine: Psychosis and Agitation in Dementia

Acute Extrapyramidal Symptoms



AIMS = abnormal involuntary movement scale; LOCF = last observation carried forward; Street et al. 3rd Congress of European Federation of Neurological Societies, 1998

Olanzapine: Psychosis and Agitation in Dementia

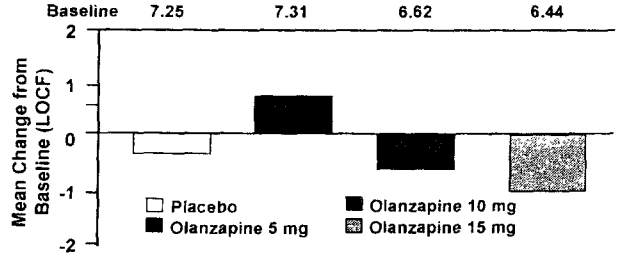
Treatment-Emergent Potential Peripheral Anticholinergic Adverse Events

		Olanzapine (N, %)		
	Placebo (N=46)	5 mg (N=56)	10 mg (N=50)	15 mg (N=54)
Constipation	2 (4.3)	2 (3.6)	3 (6.0)	4 (7.5)
Fecal impaction	1 (2.1)	1 (1.8)	1 (2.0)	2 (3.8)
Intestinal obstruction	0	0	1 (2.0)	0
Dry mouth	1 (2.1)	3 (5.4)	1 (2.0)	0
Urinary retention	0	0	1 (2.0)	1 (1.9)
Amblyopia	0	1 (1.8)	0	0

No significant differences were found among placebo and olanzapine treatment groups

Olanzapine: Psychosis and Agitation in Dementia

Mini-Mental State Exam (MMSE) Total*



*Sum of all items; LOCF = last observation carried forward; Street et al. 3rd Congress of European Federation of Neurological Societies, 1998

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Key Slides

Evidence for Olanzapine Improving Cognition

- Using *in vivo* microdialysis, olanzapine raises brain acetylcholine levels[1]
- 5-HT_3 receptor antagonists increase acetylcholine release[2]
- Acetylcholine M_2 receptor antagonist increase acetylcholine release[3]

[1]Ichikawa J, et al. Society for Neuroscience 1999 Annual Meeting, October 23-28; Miami, Florida; [2]Giovanni MG, et al. J Pharmacol Exp Ther. 1998;285:1219-1225; [3]Stillman MJ, et al. Brain Res Bull. 1996;41(4):221-226

Reduction of Psychotic Symptoms in Patients with Lewy Body Dementia (LBD) Treated with Olanzapine

Background

- Approximately 15-25% of elderly demented patients have cortical or subcortical Lewy bodies
- Most cases of DLB (~75%) have clinical and pathological features of Alzheimer's dementia, of which DLB has some overlap

Street et al. European Neuropsychopharmacology. 1999;9(suppl 5)

Reduction of Psychotic Symptoms in Patients with Lewy Body Dementia (LBD) Treated with Olanzapine (Cont.)

Background

- Core clinical features usually include:
  - Fluctuating cognition, attention and alertness
  - Recurrent visual hallucinations and other psychotic symptoms
  - Spontaneous motor features of parkinsonism

Street et al. European Neuropsychopharmacology. 1999;9(suppl 5)

ZY 9371 689

Key Slides

Reduction of Psychotic Symptoms in Patients with Lewy Body Dementia (LBD) Treated with Olanzapine

Background: DLB Diagnosis and Treatment

- Susceptible to confusional, agitational effects of neuroleptics
- Susceptible to parkinsonian effects of neuroleptics

Street et al. European Neuropsychopharmacology. 1999;9(suppl 5)

Reduction of Psychotic Symptoms in Patients with Lewy Body Dementia (LBD) Treated with Olanzapine (Cont.)

Background: DLB Diagnosis and Treatment

- Important to differentiate DLB from pure AD due to differences in treatment response
  - More impairment on attentional, executive, visuospatial tasks than in AD
  - Fluctuating, rapid progression
  - Extrapyramidal symptoms similar to Parkinson's but less severe
  - Better response to cholinesterase inhibitors than in AD

Street et al. European Neuropsychopharmacology. 1999;9(suppl 5)

Reduction of Psychotic Symptoms in Patients with Lewy Body Dementia (LBD) Treated with Olanzapine

Primary Objective: DLB Analysis

- To assess the efficacy of 5, 10 and 15 mg/day of olanzapine compared to placebo in the treatment of psychosis among patients in nursing care facilities who have Alzheimer's disease and possible dementia with Lewy bodies

Street et al. European Neuropsychopharmacology. 1999;9(suppl 5)

ZY 9371 690

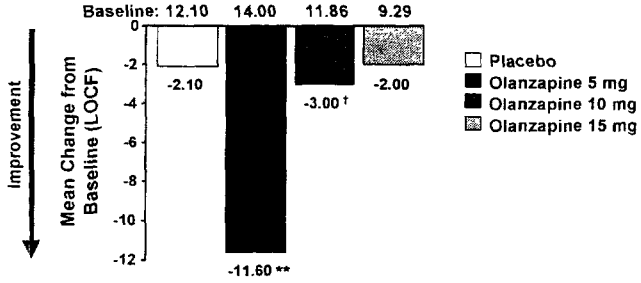
Key Slides

Assessments and Analysis Methods: Efficacy

- Primary measure
  - NPI/NH psychosis total: sum of hallucinations and delusions items
- Secondary measures
  - Other NPI/NH items
  - Brief Psychiatric Rating Scale (BPRS)
  - Mini-Mental State Examination (MMSE)

NPI/NH Psychosis Total

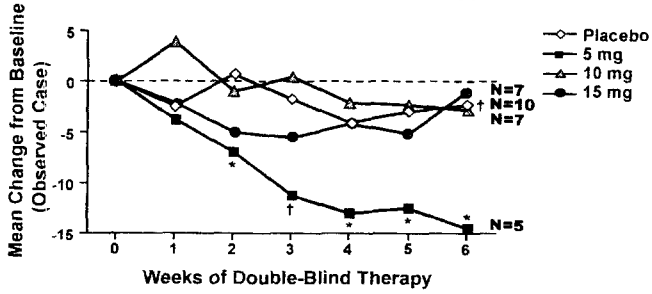
Delusions and Hallucinations



†p=0.055 vs. placebo; **p=0.003 vs. placebo; Significantly greater improvement in sum of delusions and hallucinations items with 5 mg/day of olanzapine; Numerically greater improvement with 10 mg/day of olanzapine

NPI/NH Psychosis Total

Delusions and Hallucinations



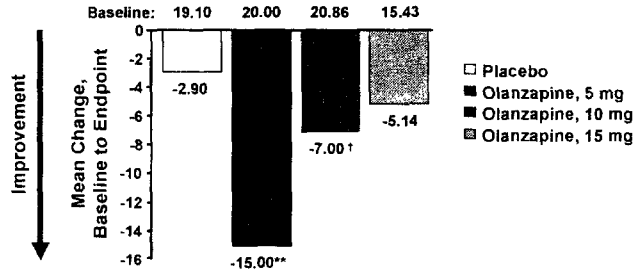
†p=0.05≤ p≤0.10 vs. placebo; *p≤0.05 vs. placebo; Significant improvement on the NPI psychosis total items with 5 mg/day olanzapine; Changes in patients receiving 10 or 15 mg/day were not significantly different from those in patients receiving placebo

ZY 9371 691

Key Slides

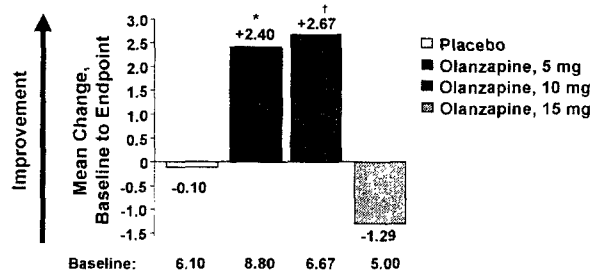
NPI/NH Core Total

Agitation/Aggression, Delusions and Hallucinations



†p=0.062 vs. placebo; **p=0.004 vs. placebo; Significantly greater improvement on the NPI core total items with 5 mg/day of olanzapine; Numerically greater improvement with 10 or 15 mg/day

MMSE Total (Sum of All Items)



†p=0.507 vs. placebo; *p=0.035 vs. placebo; Significantly greater improvement in cognitive functioning with 5 mg/day of olanzapine; Numerically greater improvement with 10 mg/day; Patients receiving 15 mg/day were not significantly different from those receiving placebo

Antipsychotic Treatment of Maladaptive Behaviors in Dementia

- N = 2,747
- Geriatric psychiatric inpatients with a primary DSM-IV discharge diagnosis of dementia disorder
- **Purpose:** compare improvements in maladaptive behaviors associated with 1 of 3 antipsychotic agents: haloperidol, olanzapine or risperidone

Tunis et al. Institute of Psychiatric Sources, New Orleans, 1999

ZY 9371 692

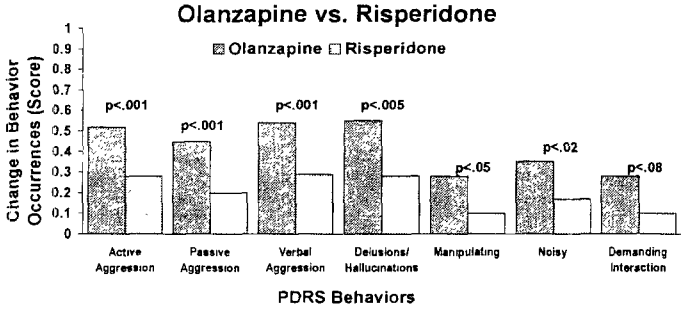
Key Slides

Outcome Instrument: Psychogeriatric Dependency Rating Scale (PDRS)

- Behaviors rated
  - Disruptive
  - Manipulative
  - Wandering
  - Socially objectionable
  - Demanding interaction
  - Communication difficulties
  - Noisy
  - Active aggression
  - Passive aggression
  - Verbal aggression
  - Restless
  - Destructive (self)
  - Destructive (property)
  - Affect-elated
  - Delusions/hallucinations
  - Speech content
- Scored as 1 = never, 2 = occasionally, 3 = frequently

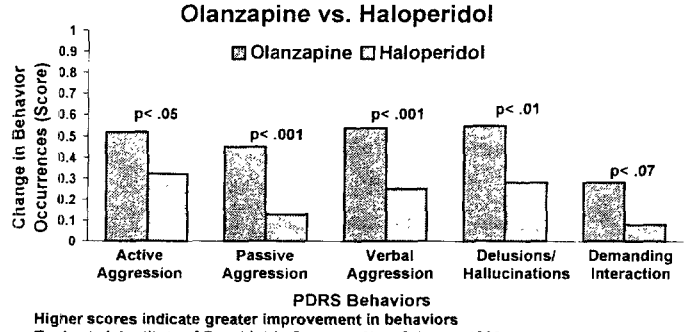
Tunis et al. Institute of Psychiatric Sources, New Orleans, 1999

PDRS Behavioral Changes in Occurrence from Admission to Discharge



Higher scores indicate greater improvement in behaviors
Tunis et al. Institute of Psychiatric Sources, New Orleans, 1999

PDRS Behavioral Changes in Occurrence from Admission to Discharge



Higher scores indicate greater improvement in behaviors
Tunis et al. Institute of Psychiatric Sources, New Orleans, 1999

ZY 9371 693

Key Slides

Chronic Schizophrenia in the Geriatric Patient

- Early age of onset
- Severe negative symptoms
- Poor adaptive functioning
- Severe cognitive impairment
- Require lengthy institutional care
- Late-onset schizophrenia has a different presentation

Differentiating Late- and Early-Onset Schizophrenia

	Early Onset	Late Onset
Delusions of persecution	+	++++
Sensory hallucinations	+	++
Formal thought disorder	+++	+
Blunted affect	+++	+
Cognitive impairment	+/-	+

Adapted from: Pearlson et al. Am J Psychiatry. 1989;146:1568-1574

Olanzapine vs. Haloperidol in the Treatment of Elderly Patients with Schizophrenia and Related Psychotic Disorders

Study Design

- Global
- Geriatric patients; age ≥65 years
- N=59
- Schizophrenia/schizophreniform disorder/ schizoaffective disorder, in/outpatient, $BPRS_{0-6}$ _18 or intolerant of current therapy

Burns PR, et al. Presented at the XXI Collegium Internationale Neuro-psychopharmacologicum Congress; Glasgow, Scotland; June 12-16, 1998

ZY 9371 694

Key Slides

Olanzapine vs. Haloperidol in the Treatment of Elderly Patients with Schizophrenia and Related Psychotic Disorders (Cont.)

Study Design

- 6 weeks acute, extension
- 2 treatment groups
  - Olanzapine, 5-10 mg/day
  - Haloperidol, 5-20 mg/day

Burns PR, et al. Presented at the XXI Collegium Internationale Neuro-psychopharmacologicum Congress; Glasgow, Scotland; June 12-16, 1998

Conclusions

Efficacy Findings

- Olanzapine was numerically greater than haloperidol in the treatment of overall and negative symptom psychopathology and depressive symptoms
- Lower rate of discontinuation because of lack of efficacy with olanzapine than with haloperidol

Burns PR, et al. Presented at the XXI Collegium Internationale Neuro-psychopharmacologicum Congress; Glasgow, Scotland; June 12-16, 1998

Conclusions

Safety Findings

- Lower rate of discontinuation because of adverse events with olanzapine than with haloperidol
- Olanzapine-treated patients had statistically significantly less EPS than haloperidol-treated patients
- Olanzapine had a superior adverse-event profile versus haloperidol

Burns PR, et al. Presented at the XXI Collegium Internationale Neuro-psychopharmacologicum Congress; Glasgow, Scotland; June 12-16, 1998

ZY 9371 694.001

Key Slides

Choice of Medication Is the Behavior

- Withdrawn, irritable, dysphoric?
  - **Consider antidepressant**
- Hyperactive, pressured, sexual?
  - **Consider mood stabilizing agent or novel antipsychotic agent**
- Paranoid, hallucinating, psychotic?
  - **Consider novel antipsychotic**
- Physically aggressive, violent?
  - **Consider novel antipsychotic**
- Restless, situation specific, anxious?
  - **Consider serotonergic agent or buspirone**

Conclusion and Summary

- Late-life psychosis usually presents as agitation
- Nonpharmacological interventions should be used in combination with pharmacological
- Drug choice should be based on side effect profile
- The novel antipsychotics, by virtue of their side effect profile, are the preferred agents
- Olanzapine and risperidone are both excellent choices with some definite advantages that would favor olanzapine
- Reintegration, not containment is the goal of treatment

ZY 9371 694.002

Notes

ZY 9371 695

Key Slides

Improving Patient Outcomes in Geriatric Psychoses

Challenges in Nursing Home Psychiatry

- State hospitals have been replaced by nursing homes*
- Psychiatric care often delivered by nonpsychiatrists
- Crucial role of nonphysician staff
- Staff educational needs, support and turnover
- Excessive reliance on pharmacological interventions

*Katz I, Hendrie HH. Psychiatr Ann. 1995;25(7):408

OBRA 87

- Purpose was to standardize NH regulations and improve quality of care
- Medication errors and excessive use of psychoactive medication are indicators of poor-quality care

ZY 9371 696

Key Slides

every quarter

OBRA 87

- Resident assessment—MDS
  - Initial goal to improve patient assessment and individual care planning
  - Currently, financial and outcomes tracking instrument
- Guidelines for all aspects of resident care, including psychoactive medication use
- Facilities are responsible for physician prescribing practices

OBRA Requirements for Antipsychotic Drug Use in Nursing Facilities

- Appropriate diagnosis/target symptoms ★ — Not wandering, pacing, crying spells
- Monitoring for therapeutic outcomes and adverse effects
- Gradual dose reduction unless "clinically contraindicated"

Antipsychotic Drug Therapy for Behavioral Symptoms Associated with Dementia

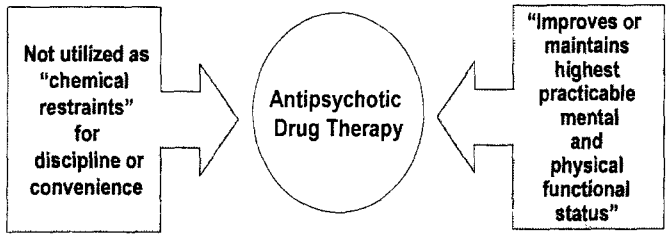
- Symptoms are **persistent** and cause **decreased functional capacity** *or* **severe distress**
- Resident is dangerous to self/others
- "Treatable medical dx or modifiable environmental conditions" addressed

ZY 9371 697

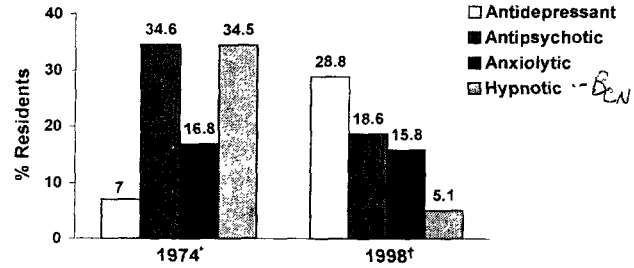
Key Slides

Role of Nonpharmacologic Interventions

- Observe patterns of behaviors prior to drug therapy
- Restructure care routine prior to drug therapy
- Use adjunctively when drug therapy is necessary to ameliorate behavioral symptoms



Psychoactive Medication Utilization in Nursing Facilities 1974-1998



*United States Department of Health, Education, and Welfare Office of Long-Term Care (1976). Physicians drug prescribing patterns in skilled nursing facilities. Washington, D.C. (DHEW pub no. 76-50050); †HCFA Online Survey Certification and Reporting (OSCAR) database 12/21/98

ZY · 9371 698

Key Slides

1999 Federal Survey Procedure Changes

- 24 "Quality Indicators" (QI) in 11 different domains
- Comparison of facility MDS data to state-wide averages
- Increased scrutiny if score above 90th percentile in any area or any score in **"sentinel event"** categories: fecal impaction, dehydration, pressure ulcers

Quality Indicators: Implications for Psychiatry

- Symptoms of depression without antidepressant therapy
- Anxiolytic and hypnotic use
- Hypnotic use > 2 times in past week
- Use of 9 or more different medications - includes Vitamins, Bowel Meds
- Antipsychotic use for behavioral symptoms

1999 Federal Guideline Change: Daily Antipsychotic Dosage for Residents with "Organic Mental Disorders"

- Risperidone 2 mg
- Olanzapine 10 mg
- Quetiapine 200 mg ← ? dosing
- Risperidone dose reduced from 4 mg d/t new geriatric EPS data
- "Not maximum doses ... establish a point where higher levels need to be explained"

ZY 9371 699

Key Slides

part of OBRA 90 reform

Potentially Inappropriate Medication Use

Beers Criteria

- Divided into high and lower severity criteria
- Subdivided into inappropriate medications and inappropriate diagnosis/medication combination
- Basis—potential risks outweigh benefits or safer alternatives available

Beers MH. Explicit criteria for determining potentially inappropriate medication use by the elderly: an update. Arch Int Med. 1997;157:1531-1536

Beers Criteria Protocol

- Resident is over 65 years old
- Has been in the facility over 7 days
- Or appears to be experiencing a noticeable ADR within the first 7 days

Diagnosis/Medication Combinations

High Severity

- COPD + sedatives/hypnotics = CO_2 retention and ↓ respiratory drive
  - Exception—lorazepam, oxazepam or alprazolam (short $t_{1/2}$)
  - Use after **"assessment and optimal tx"** of COPD symptoms
  - PRN use is "prefer

ZY 9371 700

Key Slides

Diagnosis/Medication Combinations

High Severity

- Arrythmias + any TCA = "may induce arrythmias"
  - No distinction between low dose for neurogenic pain vs. therapeutic dose for depression

Diagnosis/Medication Combinations

High Severity

- BPH + any anticholinergic = impairment of micturition and ↑ risk of obstruction
  - Antihistamines (diphenhydramine) — Dangerous
  - GI antispasmodics (propantheline)
  - All TCAs (amitriptyline)
  - Antiparkinsonism (benztropine)
  - Narcotics (considered lower severity)
- Short-term use o.k. per guidelines

High Severity Criteria

Medications

- **Amitriptyline**—for neurogenic pain only, document consideration of risk/benefit and alternative therapies
- **Doxepin**—very anticholinergic and sedating
- **Long $t_{1/2}$ BDZ or meprobamate**— ↑ incidence of falls, cognitive impairment

ZY 9371 701

Key Slides

Diagnosis/Medication Combinations

Lower Severity

- Insomnia + CNS stimulants = sleep disorder exacerbation
  - Decongestants
  - Theophylline
  - Methylphenidate
  - SSRIs and desipramine
  - MAO inhibitors
  - Beta-agonists (albuterol)

Diagnosis/Medication Combinations

Lower Severity

- Constipation + anticholinergics or narcotics = worsened constipation
  - TCAs
  - GI antispasmodics
  - Codeine et al
  - Antiparkinsonism (benztropine)
  - Sedating antihistamines

Lower Severity Criteria

Medications

- Sedating antihistamines including diphenhydramine et al
  - No hypnotic use
  - Use lowest effective dose for dermatologic indications
  - Peripheral and central anticholinergic effects
  - Short-term use

ZY 9371 702

Key Slides

Determination of Compliance with Guidelines

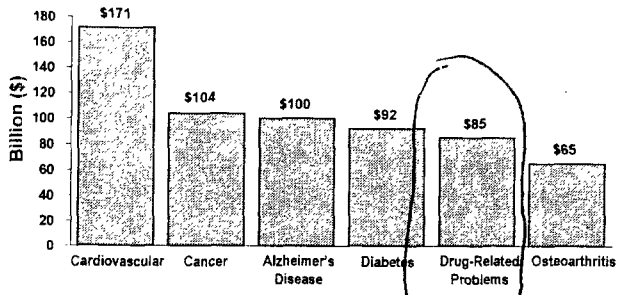
- Facility identified risks, assessed resident and determined potential benefit outweighs risk of ADR
  - Why is the medication a "drug of choice" for the resident??
- Facility continually assessed the drug and determined that this is a "valid therapeutic intervention for the resident"

Document, Document, Document, Document, Document ...

Improving Outcomes and Avoiding Medication-Related Survey Citations

- Team with consultant pharmacist and review drug regimens
- If possible, eliminate "inappropriate" drugs
- For patients prescribed "inappropriate" drugs
  - Document diagnosis
  - **Clearly** document benefit > risk
    - Lack of negative outcomes (example)
    - Maintenance of **functional status**

Economic Impact of Diseases and Drug-Related Problems



Source: Alzheimer's Disease Education and Referral Center, National Cancer Institute, American Diabetes Association, Arthritis Association, National Center for Health Statistics

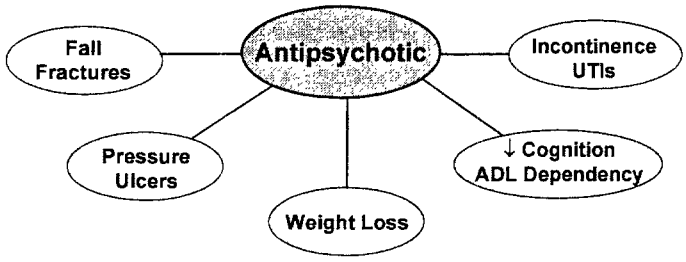
ZY 9371 703

Key Slides

"Antipsychotics cause the most adverse effects of any of the psychotropic medications (prescribed for the elderly) and are second only to diuretics with respect to adverse drug reactions in general"

Cooper JW. Probable adverse drug interactions in a rural geriatric nursing home population: a four-year study. J Am Geriatric Soc. 1996;44:194-197

Quality Indicators: Negative Outcomes Potentially Associated with Antipsychotic Use



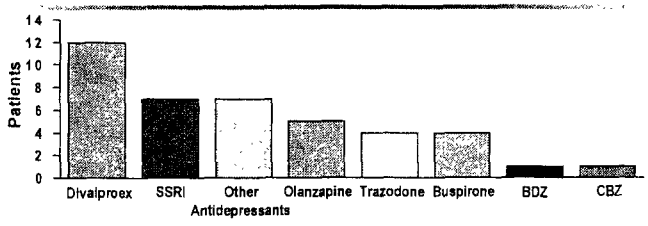
Potential Causes of Antipsychotic-Related Adverse Events

- Medical and psychiatric polypharmacy
  - Drug-drug interactions
  - Drug-disease interactions
- Age-related changes in receptor sensitivity and organ function

ZY 9371 704

Key Slides

Polypharmacy in the Treatment of Dementia-Related Behavioral Symptoms



- Study of long-term use of risperidone for dementia-related behaviors in 2 NH
- Retrospective review; N=57
- Mean nonpsychotropic drugs/patient = 3.3

Goldberg RJ. Int J Geriatr Psychopharmacol. 1999;2:1-4

Atypical Antipsychotics: Geriatric Dosing Issues

	Maximum Dose (mg/Day) (OBRA)	Adjust Dose for Renal Impairment	Adjust Dose for Hepatic Impairment	Active Metabolite
Risperidone	2	Yes Clearance ↓ 50% in moderate-severe RI	Yes	Yes
Olanzapine	10	No	Yes	No
Quetiapine	200	No	Yes	Yes

Ereshefsky L. Pharmacokinetics and drug interactions: update for new antipsychotics. J Clin Psychiatry. 1996;57(suppl 11):12-25

Pharmacokinetic Interactions: Risperidone

Risperidone + (Paroxetine / Bupropion / Quinidine) = Monitoring: Somnolence, Orthostatic hypotension, Falls, EPS

CYP450 2D6 Inhibitors

ZY 9371 705

Suzanne Clifford - All SSRIs

ZY 9371 706

WELCOME AMERICA!

Suzanne -

Manji's three slides (page 40 - 41) on Pharmacokenetic Interactions is very confusing. not to mention not totally accurate.

(All SSRIs - including Zoloft has P450 2D6 interaction potential and 3A4.

Not sure of the value of these slides. If we keep them - should include Sertaline in SSRI class.

ZY 9371 707

Key Slides

Pharmacokinetic Interactions: Olanzapine

Olanzapine + (Fluvoxamine, Fluoroquinolones) = Monitoring: Somnolence, Ataxia, Falls

CYP450 1A2 Inhibitors

Significant inducers: cigarette smoke, carbamazepine

Pharmacokinetic Interactions: Quetiapine

Quetiapine + (Fluvoxamine, Clarithromycin, Nefazodone, Itraconazole, Diltiazem, Grapefruit juice) = Monitoring: Somnolence, Orthostatic hypotension, Falls

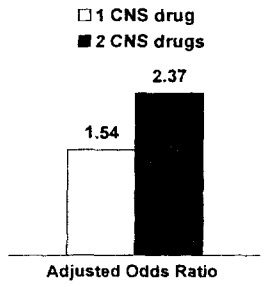
CYP450 3A4 Inhibitors

Significant inducers: phenytoin, thioridazine

Zithromax

one of the most important

Falls and Psychotropic Drugs in the Elderly



- Poor prognosis post-hip fracture
- CHI, pressure ulcers, fear of ambulation
- Annualized mean cost: $754/fall in NH (Cooper, 1997)

Weiner DK, Hanlon JT, Studenski SA. Gerontology. 1998;44:217-21; Cooper J. Consultant Pharmacist. 1997;12:1305-1309

ZY 9371 708

Key Slides

Orthostatic Hypotension and Atypical Antipsychotics

- Risperidone > quetiapine > olanzapine
- Zarate (1997): retrospective review of 122 psychogeriatric inpatients
  - Hypotension: 45.9%
  - Symptomatic: 9.8%
    - Onset 3.2 ± 3.2 days (1-13)
    - 41.7% concurrent antihypertensives
    - 58.3% concurrent SSRI or valproate

Zarate CA, Baldessarini RJ, Siegel AJ, et al. J Clin Psychiatry. 1997;58:311-317

Orthostatic Hypotension and Atypical Antipsychotics

- Quetiapine
  - Tariot[1]: postural hypotension—15%
  - McManus[2]: postural hypotension—13%
- Olanzapine
  - Lane[3]: olanzapine 5-20 mg vs. haloperidol 5-20 mg—NS change in vital signs
  - Street[4]: olanzapine 5-15 mg vs. placebo—NS change in vital signs

[1]Tariot P, et al. APA Annual Meeting, May 15-20 1999; [2]McManus DQ, et al. J Clin Psychiatry. 1999;60:292-298; [3]Lane LM, et al. 11th European College of Neuropsychopharmacology Congress, Paris, France, Oct. 31-Nov.4 1998; [4]Street J, et al. 3rd Congress of European Federation of Neurological Societies, Seville, Spain, Sept.19th-25th, 1998

Cardiovascular Effects of Atypical Antipsychotics in the Elderly

- Peripheral edema: risperidone; likely dose related
- QT prolongation: most data with risperidone
  - Madhusoodanan[1]: 9/103 QT_C > 450 ms
  - Zarate[2]: 2/122 cardiac arrest
  - Katz[3]: risperidone 0.5-2 mg/day—NS change in vital signs vs. placebo

[1]Madhusoodanan S, Brecher M, Brenner R, et al. Am J Geriatric Psychiatry. 1999;7:132-138; [2]Zarate CA, Baldessarini RJ, Siegel AJ, et al. J Clin Psychiatry. 1997;58:311-317; [3]Katz IR, Jeste DV, Mintzer JE, et al. J Clin Psychiatry. 1999;60:107-115

ZY 9371 709

Key Slides

Cardiovascular Effects of Atypical Antipsychotics in the Elderly

- Quetiapine
  - McManus[1]: NS change in ECG or intervals
- Olanzapine
  - Street[2]: olanzapine 5-15 mg—NS change in ECG vs. placebo

[1]McManus DQ, et al. J Clin Psychiatry. 1999;60:292-298; [2]Street J, et al. 3rd Congress of European Federation of NeurologicalSocieties, Seville, Spain, Sept. 19th-25th, 1998

Drug-Related Risk Factors: Torsades de Pointes

- Diuretics
- Antiarrhythmic agents
- [redacted]
- ~~Cisapride~~ Propulcid - qtc prolongation
- Cyclic antidepressants
- Antipsychotics
  - Phenothiazines, haloperidol, pimozide, investigational

Viskin S. Lancet. 1999;354(9190):1635-1633

Geriatric Weight Gain and Atypical Antipsychotics

- Diabetes, cardiovascular disease, osteoarthritis
- Geriatric data
  - Madhusoodanan[1]: olanzapine +1.85 lb; risperidone NS
  - Witterling[2], Kinon[3]: older patients gain less weight
- Treatment plan: dietary counseling and weight monitoring

[1]Madhusoodanan S et al. Ann Clin Psychiatry. 1999;11:113-118; [2]Witterling et al. J Clin Psychopharmacol. 1999;19:316-321; [3]Kinon et al. 11th European College of Neuropsychopharmacology Congress Paris, France 1998

ZY 9371 710

Key Slides

Assessment of Geriatric Weight Loss

- Comprehensive assessment for potential sources of weight loss/anorexia
  - Medications or medical conditions
  - Need for assistance with meal preparation or eating
  - Dietary preferences
  - Supplements
  - Dentures

Atypical Antipsychotics and Seizures

- July 1999 HCFA guidelines discourage use of any antipsychotic in NH patients with hx of seizure
- Documentation should include risk/benefit assessment and monitoring of seizure frequency

Decreasing the Risk of Antipsychotic-Induced Seizures

Risk Factors

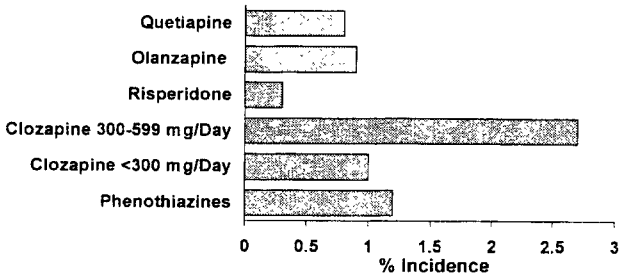
- Pre-existing seizure disorder
- Abnormal EEG without seizure history
- Pre-existing CNS pathology
- Rapid increases in antipsychotic dose

Perry PJ, Alexander B, Liskow BI. Psychotropic Drug Handbook. 7th ed. Washington D.C.: American Psychiatric Press; 1997: p.53

ZY 9371 711

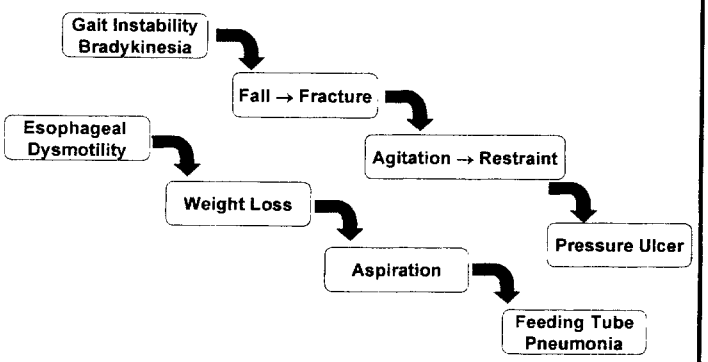
Key Slides

Comparison of Antipsychotic Associated Seizure Incidence



Alldredge BK. Seizure risk associated with psychotropic drugs: clinical and pharmacokinetic considerations. Neurology. 1999;53(suppl 2):S68-S75

The EPS Cascade



Neuroleptic-Induced Parkinsonism (NIP): Use of Conventional Antipsychotics in Dementia

- NIP detected within 1 week of beginning perphenazine (mean dose = 8 mg)[1]
- At 9 months of low-dose thioridazine or haloperidol, 66.7% had developed NIP[2]
  - Mean dose = 25.9 ± 18.2 mg/day CPZ equivalents

[1]Sweet RA, Pollock BG, Rosen J, et al. J Geriatric Psychiatry Neurology. 1994;7(4):251-253; [2]Caligiuri MP, Rocwell E, Jeste DV. Am J Geriatr Psychiatry. 1998;6:75-82

ZY 9371 712

Key Slides

Tardive Dyskinesia in Older Patients: Risperidone and Haloperidol

- Heterogeneous sample; N=61
- Both groups had received risperidone or haloperidol <3 months prior to study
  - Median daily dose = 1 mg
- Baseline modified SAS ($p<0.04$) and AIMS ($p<0.03$) scores higher in risperidone group
- 9-month endpoint, cumulative incidence of TD >> haloperidol group ($p<0.05$)

Jeste DV, Lacro JP, Bailey A, et al. J Am Geriatr Soc. 1999;47:716-719

EPS and Atypical Antipsychotics in Dementia with Behavioral Symptoms

- Risperidone[1]: EPS in therapeutic dose range
- Quetiapine[2]: small, significant improvement-SAS; NS change—AIMS
- Olanzapine[3]: NS change in SAS or AIMS vs. placebo at 5-15 mg/day

[1]Katz IR, Jeste DV, Mintzer JE, et al. J Clin Psychiatry. 1999;60:107-115; [2]McManus DQ, Arvanitis LA, Kowalcyk BB. J Clin Psychiatry. 1999;60:292-298; [3]Street J, Mitan S, Tamura R, et al. 3rd Congress of European Federation of Neurological Societies, 1998

Length of Therapy: Antipsychotics for Behavioral Symptoms in Dementia

- Optimal duration of treatment unknown
- Ongoing assessment of efficacy and ADRs
  - Antipsychotics for severe aggression: consensus guidelines[1] recommend 2-3 months stable behavior before dose reduction
  - HCFA: 2 attempts to reduce dose over 1-year period

[1]Alexopoulos GS, Silver JM, Kahn DA, et al. The Expert Consensus Guideline Series: Agitation in Older Persons with Dementia. Postgraduate Medicine; April 1998

ZY 9371 713

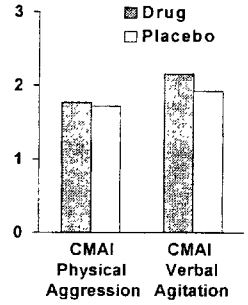
Key Slides

Antipsychotic Drug Discontinuation

- Gradual taper except in cases of acute toxicity
- Abrupt discontinuation
  - Cholinergic rebound[1]
    - Thioridazine, clozapine
    - N/V, diaphoresis, insomnia
  - Withdrawal dyskinesias
  - Relapse or rebound syndrome

[1]Melnyk WT, Worthington AG, Laverty SG. Can Psychiatr Assoc J. 1966;11:410-412

Withdrawal of Haloperidol, Thioridazine and Lorazepam in the Nursing Home



- DB controlled crossover trial: 60% completed
- Mean duration of therapy: 16.5 months
- No behavioral or functional differences detected after placebo crossover

Cohen-Mansfield J, Lipson S, Werner P, et al. Arch Intern Med. 1999;159:1733-1740

ADR Prevention Strategies

- Choose therapy according to target symptoms
- Consider comorbid conditions and concomitant drugs prior to drug therapy selection
- Careful titration
- Educate caregiver/patient
- Minimum effective dose

ZY 9371 714

Key Slides

Prospective Identification of High Risk Patients

- Older than 85 years
- >6 active medical dx
- Prior ADR
- Low body weight (BMI<22 kg/m^2)
- Decreased renal function (Cl_{CR}<50 ml/min)
- Digoxin, warfarin, lithium
- Anticonvulsants, antipsychotics, hypnotics, narcotics, benzodiazepines, anticholinergics
- Polypharmacy

Fouts M, Hanlon J, Pieper C, et al. Identification of elderly nursing facility residents at high risk for drug-related problems. Consultant Pharmacist. 1997;12:1103-1111

ADR Prevention Strategies

- Routinely review and débride drug regimens, particularly for patients at high risk of negative outcomes
  - Falls
  - Cognitive impairment
  - Pressure ulcers
  - Weight loss
  - Behavioral disorders

Conclusions

- ADRs occurring in older adults are costly, may result in suboptimal efficacy and contribute significantly to morbidity and mortality
- Potential adverse effect burden should be evaluated prior to atypical antipsychotic selection
- Prospective evaluation of medical comorbidity and concurrent drug therapy will likely result in improved therapeutic outcomes and decreased ADRs with the newer atypicals

ZY 9371 715

Key Slides

Selected Internet Resources

- www.mayo.edu/geriatrics-rst/Dementia.I_ToC.html
- www.mayo.edu/geriatrics-rst/DemIII_ToC.html
- www.mayo.edu/geriatrics-rst/Behav_ToC.html
- www.alzheimers.org/
- www.caregiver.org/
- www.brain.nwu.edu/

ZY 9371 716

Notes

ZY 9371 717

Appendix

Reisberg et al.

Appendix A: Behavioral Pathology in Alzheimer's Disease Rating Scale (BEHAVE-AD)

Part 1: Symptomatology
Assessment Interval: Specify: _____ wks.
Total Score: _____

A. Paranoid and Delusional Ideation

1. "People are Stealing Things" Delusion

   (0) Not present
   (1) Delusion
   (2) Delusion that people are coming into the home and hiding objects or stealing objects
   (3) talking and listening to people coming into the home

2. "One's House is Not One's Home" Delusion

   (0) Not present
   (1) Conviction that the place in which one is residing is not one's home (e.g., packing to go home; complaints while at home, of "take me home")
   (2) Attempt to leave domiciliary to go home
   (3) Violence in response to attempts to forcibly restrict exit

3. "Spouse (or Other Caregiver) is an Impostor" Delusion

   (0) Not present
   (1) Conviction that spouse (or other caregiver) is an impostor
   (2) Anger toward spouse (or other caregiver) for being an impostor
   (3) Violence towards spouse (or other caregiver) for being an impostor

4. "Delusion of Abandonment" (e.g., to an Institution)

   (0) Not present
   (1) Suspicion of caregiver plotting abandonment or institutionalization (e.g., on telephone)
   (2) Accusation of a conspiracy to abandon or institutionalize
   (3) Accusation of impending or immediate desertion or institutionalization

5. "Delusion of Infidelity"

   (0) Not present
   (1) Conviction that spouse and/or children and/or other caregivers are unfaithful.
   (2) Anger toward spouse, relative, or other caregiver for infidelity
   (3) Violence toward spouse, relative, or other caregiver for supposed infidelity

6. "Suspiciousness/Paranoia" (other than above)

(0) Not present
(1) Suspicious (e.g., hiding objects that he/she later may be unable to locate)
(2) Paranoid (i.e., fixed conviction with respect to suspicions and/or anger as a result of suspicions)
(3) Violence as a result of suspicions
Unspecified?_____
Describe_____
_____
_____

7. Delusions (other than above)

(0) Not present
(1) Delusional
(2) Verbal or emotional manifestations as a result of delusions
(3) Physical actions or violence as a result of delusions
Unspecified?_____
Describe_____
_____
_____

B. Hallucinations

8. Visual Hallucinations

(0) Not present
(1) Vague: not clearly defined
(2) Clearly defined hallucinations of objects or persons (e.g., sees other people at the table)
(3) Verbal or physical actions or emotional responses to the hallucinations

9. Auditory Hallucinations

(0) Not present
(1) Vague: not clearly defined
(2) Clearly defined hallucinations of words or phrases
(3) Verbal or physical actions or emotional response to the hallucinations

10. Olfactory Hallucinations

(0) Not present
(1) Vague: not clearly defined
(2) Clearly defined
(3) Verbal or physical actions or emotional responses to the hallucinations

Appendix

11. Haptic Hallucinations

(0) Not present
(1) Vague: not clearly defined
(2) Clearly defined
(3 Verbal or physical actions or emotional responses to the hallucinations

12. Other Hallucinations

(0) Not present
(1) Vague: not clearly defined
(2) Clearly defined
(3) Verbal or physical actions or emotional responses to the hallucinations
Unspecified?_____
Describe_____
_____
_____

C. Activity Disturbances

13. Wandering: Away from Home to Caregiver

(0) Not present
(1) Somewhat, but not sufficient to necessitate restraint
(2) Sufficient to require restraint
(3) Verbal or physical actions or emotional responses to attempts to prevent wandering

14. Purposeless Activity (Cognitive Abulia)

(0) Not present
(1) Repetitive, purposeless activity (e.g., opening and closing pocketbook, packing and unpacking clothing, repeatedly putting on and removing clothing, opening and closing drawers, insistent repeating of demands or questions)
(2) Pacing or other purposeless activity sufficient to require restraint
(3) Abrasions or physical harm resulting from purposeless activity

15. Inappropriate Activity

(0) Not present
(1) Inappropriate activities (e.g., storing and hiding objects in inappropriate places, such as throwing clothing in wastebasket or putting empty plates in the oven; inappropriate sexual behavior, such as inappropriate exposure)
(2) Present and sufficient to require restraint
(3) Present, sufficient to require restraint, and accompanied by anger or violence when restraint is used

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D. Aggressiveness

16. Verbal Outbursts
    (0) Not present
    (1) Present (including unaccustomed use of foul or abusive language)
    (2) Present and accompanied by anger
    (3) Present, accompanied by anger, and clearly directed at other persons

17. Physical Threats and/or Violence

    (0) Not present
    (1) Threatening behavior
    (2) Physical violence
    (3) Physical violence accompanied by vehemence

18. Agitation (other than above)

    (0) Not present
    (1) Present
    (2) Present with emotional component
    (3) Present with emotional and physical component
    Unspecified?_____
    Describe_____
    _____
    _____

E. Diurnal Rhythm Disturbances

19. Day/Night Disturbance

    (0) Not present
    (1) Repetitive wakenings during night
    (2) 50% to 75% of former sleep cycle at night
    (3) Complete disturbance of diurnal rhythm (i.e., less than 50% of former sleep cycle at night)

F. Affective Disturbance

    (0) Not present
    (1) Present
    (2) Present and accompanied by clear affective component
    (3) Present and accompanied by affective and physical component (e.g., "wrings hands" or other gestures)

21. Depressed Mood: Other

    (0) Present
    (1) Present (e.g., occasional statement "I wish I were dead," without clear affective concomitants)
    (2) Present with clean concomitants (e.g., thoughts of death)
    (3) Present with emotional and physical concomitants (e.g., suicide gestures)
    Unspecified?_____
    Describe_____
    _____
    _____

Appendix

G. Anxieties and Phobias

22. Anxiety Regarding Upcoming Events (Godot Syndrome)

(0) Not present
(1) Present: Repeated queries and/or other activities regarding upcoming appointments and/or events
(2) Present and disturbing to caregivers
(3) Present and intolerable to caregivers

23. Other Anxieties

(0) Not present
(1) Present
(2) present and disturbing to caregivers
(3) Present and intolerable to caregivers
Unspecified?_____
Describe_____
_____
_____

24. Fear of Being Left Alone

(0) Not present
(1) Present: Vocalized fear of being alone
(2) Vocalized and sufficient to require specific action on part of caregiver
(3) Vocalized and sufficient to require patient to be accompanied at all times

25. Other Phobias

(0) Not present
(1) present
(2) Present and of sufficient magnitude to require specific action on part of caregiver
(3) Present and sufficient to prevent patient activities
Unspecified?_____
Describe_____
_____
_____

Part 2: Global Rating

With respect to the above symptoms, they are of sufficient magnitude as to be:

(0) Not at all troubling to the caregiver or dangerous to the patient
(1) Mildly troubling to the caregiver or dangerous to the patient
(2) Moderately troubling to the caregiver or dangerous to the patient
(3) Severely troubling or intolerable to the caregiver or dangerous to the patient

ZY 9371 722

Appendix

SIMPSON-ANGUS SCALE (SAS)

Enter appropriate code in boxes below.

1. GAIT

SCORE ☐

0 = Normal
1 = Mild diminution in swing while the patient is walking
2 = Obvious diminution in swing suggesting shoulder rigidity
3 = Stiff gait with little or no arm swing noticeable
4 = Rigid gait with arms slightly pronated; or stooped-shuffling gait with propulsion and retropulsion
9 = Not ratable

2. ARM DROPPING

SCORE ☐

0 = Normal, free fall with loud slap and rebound
1 = Fall slowed slightly with less audible contact and little rebound
2 = Fall slowed, no rebound
3 = Marked slowing, no slap at all
4 = Arms fall as though against resistance: as though through glue
9 = Not ratable

3. SHOULDER SHAKING

SCORE ☐

0 = Normal
1 = Slight stiffness and resistance
2 = Moderate stiffness and resistance
3 = Marked rigidity with difficulty in passive movement
4 = Extreme stiffness and rigidity with almost a frozen joint
9 = Not ratable

4. ELBOW RIGIDITY

SCORE ☐

0 = Normal
1 = Slight stiffness and resistance
2 = Moderate stiffness and resistance
3 = Marked rigidity with difficulty in passive movement
4 = Extreme stiffness and rigidity with almost a frozen joint
9 = Not ratable

5. WRIST RIGIDITY

SCORE ☐

0 = Normal
1 = Slight stiffness and resistance
2 = Moderate stiffness and resistance
3 = Marked rigidity with difficulty in passive movement
4 = Extreme stiffness and rigidity with almost a frozen joint
9 = Not ratable

6. LEG PENDULOUSNESS

SCORE ☐

0 = The legs swing freely
1 = Slight diminution in the swing of the legs
2 = Moderate resistance to swing
3 = Marked resistance and damping of swing
4 = Complete absence of swing
9 = Not ratable

7. HEAD DROPPING

SCORE ☐

0 = The head falls completely with a good thump as it hits the table
1 = Slight slowing in fall, mainly noted by lack of slap as head meets the table
2 = Moderate slowing in the fall quite noticable to the eye
3 = Head falls stiffly and slowly
4 = Head does not reach examining table
9 = Not ratable

8. GLABELLAR TAP

SCORE ☐

0 = 0-5 blinks
1 = 6-10 blinks
2 = 11-15 blinks
3 = 16-20 blinks
4 = 21 or more blinks
9 = Not ratable

9. TREMOR

SCORE ☐

0 = Normal
1 = Mild finger tremor, obvious to sight and touch
2 = Tremor of hand or arm occurring spasmodically
3 = Persistent tremor of one or more limbs
4 = Whole body tremor
9 = Not ratable

10. SALIVATION

SCORE ☐

0 = Normal
1 = Excess salivation so that pooling takes place if mouth is open and tongue is raised
2 = Excess salivation is present and might occasionally result in difficulty speaking
3 = Speaking with difficulty because of excess salivation
4 = Frank drooling
9 = Not ratable

Appendix

ABNORMAL INVOLUNTARY MOVEMENT SCALE (AIMS)

Instructions: Complete examination procedure before making ratings. When rating movements, rate highest severity observed and rate movements that occur upon activation one less than those observed spontaneously.

(Put appropriate code in boxes below)

FACIAL AND ORAL MOVEMENTS

1. **Muscles of facial expression**
   e.g., movements of forehead, eyebrows, periorbital area, cheeks; include frowning, blinking, smiling, grimacing.

   ☐ 0 = None
   1 = Minimal (may be extreme normal)
   2 = Mild
   3 = Moderate
   4 = Severe

2. **Lips and perioral area**
   e.g., puckering, pouting, smacking.

   ☐ 0 = None
   1 = Minimal (may be extreme normal)
   2 = Mild
   3 = Moderate
   4 = Severe

3. **Jaw**
   e.g., biting, clenching, chewing, mouth opening, lateral movements.

   ☐ 0 = None
   1 = Minimal (may be extreme normal)
   2 = Mild
   3 = Moderate
   4 = Severe

4. **Tongue**
   Rate only increase in movement both in and out of mouth, **not** inability to sustain movement.

   ☐ 0 = None
   1 = Minimal (may be extreme normal)
   2 = Mild
   3 = Moderate
   4 = Severe

EXTREMITY MOVEMENTS

5. **Upper (arms, wrists, hands, fingers)**
   Include choreic movements (i.e., rapid, objectively purposeless, irregular, spontaneous) and athetoid movements (i.e., slow, irregular, complex, serpentine). Do **not** include tremor (i.e., repetitive, regular, rhythmic).

   ☐ 0 = None
   1 = Minimal (may be extreme normal)
   2 = Mild
   3 = Moderate
   4 = Severe

EXTREMITY MOVEMENTS (cont'd)

6. **Lower (legs, knees, ankles, toes)**
   e.g., lateral knee movement, foot tapping, heel dropping, foot squirming, inversion and eversion of foot.

   ☐ 0 = None
   1 = Minimal (may be extreme normal)
   2 = Mild
   3 = Moderate
   4 = Severe

TRUNK MOVEMENTS

7. **Neck, shoulders, hip**
   e.g., rocking, twisting, squirming, pelvic gyrations.

   ☐ 0 = None
   1 = Minimal (may be extreme normal)
   2 = Mild
   3 = Moderate
   4 = Severe

GLOBAL JUDGEMENTS

8. **Severity of abnormal movements.**

   ☐ 0 = None/normal
   1 = Minimal
   2 = Mild
   3 = Moderate
   4 = Severe

9. **Incapacitation due to abnormal movements.**

   ☐ 0 = None/normal
   1 = Minimal
   2 = Mild
   3 = Moderate
   4 = Severe

10. **Patient's awareness of abnormal movements**
    Rate only patient's report.

    ☐ 0 = No awareness
    1 = Aware, no distress
    2 = Aware, mild distress
    3 = Aware, moderate distress
    4 = Aware, severe distress

DENTAL STATUS

Any current problems with teeth and/or dentures? ☐ YES ☐ NO

Does patient usually wear dentures? ☐ YES ☐ NO

ZY 9371 724

Appendix

BARNES AKATHISIA RATING SCALE (BAS)

INSTRUCTIONS

Patient should be observed while seated, and then standing while engaged in neutral conversation (for a minimum of 2 minutes in each position). Symptoms observed in other situations, for example, while engaged in activity on the ward, may also be rated. Subsequently, the **subjective** phenomena should be elicited by direct questioning.

Put appropriate code in box below.

OBJECTIVE

☐

0 = Normal, occasional fidgety movements of the limbs

1 = Presence of characteristic restless movements: shuffling or tramping movements of the legs and feet or swinging of one leg, while sitting, *and/or* rocking from foot to foot or "walking on the spot" when standing, *but* movements present for less than half the time observed

2 = Observed phenomena, as described in (1) above, which are present for at least half the observation period

3 = Patient is constantly engaged in characteristic restless movements, *and/or* has the inability to remain seated or standing without walking or pacing, during the time observed

SUBJECTIVE

AWARENESS OF RESTLESSNESS

☐

0 = Absence of inner restlessness

1 = Nonspecific sense of inner restlessness

2 = Patient is aware of an inability to keep the legs still, or a desire to move the legs, *and/or* complains of inner restlessness aggravated specifically by being required to stand still

3 = Awareness of an intense compulsion to move most of the time *and/or* reports a strong desire to walk or pace most of the time

DISTRESS RELATED TO RESTLESSNESS

☐

0 = No distress

1 = Mild

2 = Moderate

3 = Severe

GLOBAL CLINICAL ASSESSMENT OF AKATHISIA

☐

0 = *Absent* - no evidence of awareness of restlessness. Observation of characteristic movements of akathisia in the absence of a subjective report of inner restlessness or compulsive desire to move the legs should be classified as pseudoakathisia

1 = *Questionable* - nonspecific inner tension and fidgety movements

2 = *Mild Akathisia* - awareness of restlessness in the legs *and/or* inner restlessness worse when required to stand still. Fidgety movements present, but characteristic restless movements of akathisia not necessarily observed. Condition causes little or no distress

3 = *Moderate Akathisia* - awareness of restlessness as described for mild akathisia above, combined with characteristic restless movements such as rocking from foot to foot when standing. Patient finds the condition distressing

4 = *Marked Akathisia* - subjective experience of restlessness includes a compulsive desire to walk or pace. However, the patient is able to remain seated for at least 5 minutes. The condition is obviously distressing

5 = *Severe Akathisia* - The patient reports a strong compulsion to pace up and down most of the time. Unable to sit or lie down for more than a few minutes. Constant restlessness which is associated with intense distress and insomnia

Appendix

BRIEF PSYCHIATRIC RATING SCALE (BPRS)

Please enter the score for the term which best describes the patient's condition.

0 = not assessed, **1** = not present, **2** = very mild, **3** = mild, **4** = moderate, **5** = moderately severe, **6** = severe, **7** = extremely severe

1. SOMATIC CONCERN
Degree of concern over present bodily health. Rate the degree to which physical health is perceived as a problem by the patient, whether complaints have a realistic basis or not. SCORE ☐

2. ANXIETY
Worry, fear, or over-concern for present or future. Rate solely on the basis of verbal report of patient's own subjective experiences. Do not infer anxiety from physical signs or from neurotic defense mechanisms. SCORE ☐

3. EMOTIONAL WITHDRAWAL
Deficiency in relating to the interviewer and to the interviewer situation. Rate only the degree to which the patient gives the impression of failing to be in emotional contact with other people in the interview situation. SCORE ☐

4. CONCEPTUAL DISORGANIZATION
Degree to which the thought processes are confused, disconnected, or disorganized. Rate on the basis of integration of the verbal products of the patient; do not rate on the basis of patient's subjective impression of his own level of functioning. SCORE ☐

5. GUILT FEELINGS
Over-concern or remorse for past behavior. Rate on the basis of the patient's subjective experiences of guilt as evidenced by verbal report with appropriate affect; do not infer guilt feelings from depression, anxiety or neurotic defenses. SCORE ☐

6. TENSION
Physical and motor manifestations of tension "nervousness", and heightened activation level. Tension should be rated solely on the basis of physical signs and motor behavior and not on the basis of subjective experiences of tension reported by the patient. SCORE ☐

7. MANNERISMS AND POSTURING
Unusual and unnatural motor behavior, the type of motor behavior which causes certain mental patients to stand out in a crowd of normal people. Rate only abnormality of movements; do not rate simple heightened motor activity here. SCORE ☐

8. GRANDIOSITY
Exaggerated self-opinion, conviction of unusual ability or powers. Rate only on the basis of patient's statements about himself or self-in-relation-to-others, not on the basis of his demeanor in the interview situation. SCORE ☐

9. DEPRESSIVE MOOD
Despondency in mood, sadness. Rate only degree of despondency; do not rate on the basis of inferences concerning depression based upon general retardation and somatic complaints. SCORE ☐

10. HOSTILITY
Animosity, contempt, belligerence, disdain for other people outside the interview situation. Rate solely on the basis of the verbal report of feelings and actions of the patient toward others; do not infer hostility from neurotic defenses, anxiety, nor somatic complaints. *(Rate attitude toward interviewer under "uncooperativeness").* SCORE ☐

11. SUSPICIOUSNESS
Belief *(delusional or otherwise)* that others have now, or have had in the past, malicious or discriminatory intent toward the patient. On the basis of verbal report, rate only those suspicions which are currently held whether they concern past or present circumstances. SCORE ☐

12. HALLUCINATORY BEHAVIOR
Perceptions without normal external stimulus correspondence. Rate only those experiences which are reported to have occurred within the last week and which are described as distinctly different from the thought and imagery processes of normal people. SCORE ☐

13. MOTOR RETARDATION
Reduction in energy level evidenced in slowed movements. Rate on the basis of observed behavior of the patient only; do not rate on the basis of patient's subjective impression of own energy level. SCORE ☐

14. UNCOOPERATIVENESS
Evidence of resistance, unfriendliness, resentment and lack of readiness to cooperate with the interviewer. Rate only on the basis of the patient's attitude and responses to the interviewer and the interview situation; do not rate on basis of reported resentment or uncooperativeness outside the interview situation. SCORE ☐

15. UNUSUAL THOUGHT CONTENT
Unusual, odd, strange or bizarre thought content. Rate here the degree of unusualness, not the degree of disorganization of thought processes. SCORE ☐

16. BLUNTED AFFECT
Reduced emotional tone, apparent lack of normal feeling or involvement. SCORE ☐

17. EXCITEMENT
Heightened emotional tone, agitation, increased reactivity. SCORE ☐

18. DISORIENTATION
Confusion or lack of proper association for person, place or time. SCORE ☐

ZY 9371 726

Drugs Used in the Treatment of Psychiatric and Neurological Disorders

Generic Name	Brand Name	Drug Use
abecarnil		Antianxiety
acetophenazine	Tindal	Antipsychotic (phenothiazine)
adatanserin		Antianxiety
adinazolam	Deracyn	Antidepressant
alprazolam	Xanax ER	Antianxiety; benzodiazepine
amantadine	Symmetrel, Symadine	Antiparkinsonian; antiviral
amesergide		Antidepressant
amitriptyline	Elavil, Endep, Enovil	Antidepressant (tricyclic) with sedative effects
amobarbital	Amytal, Dexamyl	Sedative-hypnotic; barbiturate; anticonvulsant
amoxapine	Asendin	Antidepressant (tricyclic); mild sedative action; neuroleptic
antiepilepsirine		Antiepileptic
aripiprazole		Antipsychotic; antagonist at D_2 receptors; agonist at presynaptic dopamine autoreceptors
benztropine	Cogentin	Anticholinergic; antihistamine; antiparkinsonian
besipirine		Anti-Alzheimer's
biperiden	Akineton	Anticholinergic; antiparkinsonian
bromocriptine	Parlodel	Dopamine receptor agonist
buprenorphine	Buprenex	Antiaddiction
bupropion	Wellbutrin	Antidepressant (aminoketone)
buspirone	BuSpar	Antianxiety (azaspirodione)
butabarbital	Butisol, Butalan, Buticaps	Sedative; barbiturate
cabergline		Dopamine agonist; antiparkinsonian
carbamazepine	Epitol, Tegretol	Anticonvulsant; antimanic
carbidopa/levodopa	Sinemet	CNS agent; Geomatrix delivery formulation
carphenazine	Proketazine (not sold in U.S.)	Antipsychotic (phenothiazine)
chlordiazepoxide	Libritabs, Librium	Benzodiazepine; sedative-hypnotic
chlorpromazine	Thorazine, Ormazine	Antipsychotic (phenothiazine); antiemetic
chlorprothixene	Taractan	Antipsychotic (thioxanthene)
citalopram	Celexa	Antidepressant (selective serotonin reuptake inhibitor)
clidinium	Librax, Quarzan	Anticholinergic
clomipramine	Anafranil	Antidepressant (tricyclic)
clonazepam	Klonopin	Anticonvulsant; benzodiazepine
clonidine	Catapres	Antihypertensive; a-adrenergic agonist
clorazepate	Tranxene	Antianxiety; benzodiazepine; anticonvulsant
clorgyline		Antidepressant (monoamine oxidase inhibitor)
clozapine	Clozaril	Antipsychotic (dibenzazepine)
cyproheptadine	Periactin	Antihistamine; antiserotonergic
dantrolene	Dantrium	Antispasticity
deprenyl		Anti-Alzheimer's; antiparkinsonian
desipramine	Norpramin, Pertofrane	Antidepressant (tricyclic)
dexfenfluramine	Redux	Antiobesity
dextroamphetamine	Dexedrine, Adderall	Sympathomimetic

This list is provided for your convenience in referencing medications that may be discussed at this conference. Inclusion in no way constitutes an endorsement of any drug by faculty and staff of CME, Inc., nor does omission of any psychotherapeutic drug indicate inacceptability as a treatment option. (Copyrights and trademarks are not shown.)

Drugs Used in the Treatment of Psychiatric and Neurological Disorders

Generic Name	Brand Name	Drug Use
diazepam	Valium	Antianxiety; benzodiazepine; anticonvulsant
diazepam (rectal delivery system)	Diastat	Sedative
dihydroergotamine	Migranal	Nasal spray formulation of DHE 45 for migraine
diltiazem	Cardizem	Calcium channel blocker
diphenhydramine	Benadryl	Antianxiety; antihistamine; antiparkinsonian
disulfiram	Antabuse	Antiaddiction
divalproex	Depakote	Anticonvulsant; antimanic
donepezil	Aricept	Boosts levels of acetylcholine
doxepin	Adapin, Sinequan	Antidepressant (tricyclic)
droperidol	Inapsine	Neuroleptic (tranquilizer)
eletriptan		5-HT_1 receptor agonist
ergoloid	Hydergine	Anti-Alzheimer's
estazolam	ProSom	Hypnotic (triazolobenzodiazepine)
eterobarb	Antilon	Anticonvulsant; antiepileptic
excitatory amino acid (EAA) receptor ligands		Treatment for central nervous system diseases
felbamate	Felbatol	Treatment for therapy-resistant onset seizures
fenfluramine	Pondimin	Appetite suppressant (nonamphetamine)
flesinoxan		Antianxiety; antidepressant
flumazenil	Romazicon	Imidazobenzodiazepine; benzodiazepine receptor antagonist
fluphenazine	Prolixin	Antipsychotic (phenothiazine)
flurazepam	Dalmane	Hypnotic
fluvoxamine	Luvox	Antidepressant (selective serotonin reuptake inhibitor)
fosphenytoin	Cerebyx	Anticonvulsant
gabapentin	Neurontin	Anticonvulsant
galantamine	Reminyl	Anti-Alzheimer's
halazepam	Paxipam	Antianxiety; benzodiazepine
haloperidol	Haldol	Antipsychotic (butyrophenone)
hydroxyzine	Atarax, Marax, Vistaril	Antianxiety; antihistamine; antiemetic; sedative
idebenone	Avan	Cognition enhancer
iloperidone		Antipsychotic
imipramine	Tofranil	Antidepressant (tricyclic)
ipsapirone		Antidepressant
isocarboxazid	Marplan	Antidepressant (monoamine oxidase inhibitor)
L-dopa, levodopa	Atamet, Larodopa, Dopar, Sinemet	Antiparkinsonian
lamotrigine	Lamictal	Anticonvulsant; antiepileptic
lazabemide		Antiparkinsonian
levacecarnine (acetyl-L-carnitine)	Alcar	Cognition enhancer; neuroprotective
levomepromazine		Antipsychotic
linopirine	Aviva	Cognition enhancer
lithium	Eskalith, Lithobid	Antimanic
lorazepam	Ativan	Antianxiety; benzodiazepine

Drugs Used in the Treatment of Psychiatric and Neurological Disorders

Generic Name	Brand Name	Drug Use
loxapine	Loxitane, Loxapine	Antipsychotic (dibenzoxazepine)
maprotiline	Ludiomil	Antidepressant (tetracyclic)
mephobarbital	Mebaral	Antianxiety; anticonvulsant; barbiturate
mesoridazine	Serentil	Antipsychotic (phenothiazine)
methadone	Dolophine	Antiaddiction
methylphenidate	Ritalin	Stimulant
metrifonate		Acetylcholinesterase inhibitor
midazolam	Versed	Sedative; benzodiazepine
mirtazapine	Remeron	Antidepressant
moclobemide*	Aurorix	Antipanic; antidepressant (reversible inhibitor of monoamine oxidase type A [RIMA])
mofegiline		Antiparkinsonian
molindone	Moban	Antipsychotic (dihydroindolone)
nalmefene	Revex	Antagonist to narcotics; antiaddiction
naloxone	Narcan	Antiaddiction
naltrexone	ReVia, Trexan	Opioid antagonist; antiaddiction (alcohol)
naratriptan	Amerge	5-HT_{1D} receptor agonist for migraine
nefazodone	Serzone	Antidepressant
neurotrophin-3 (NT-3)		Treatment for peripheral neuropathies, nerve injury and neurodegenerative diseases
nimodipine	Nimotop	Calcium channel blocker; anti-Alzheimer's
olanzapine	Zyprexa	Antipsychotic
ondansetron	Zofran	Antianxiety
paroxetine	Paxil	Antidepressant (selective serotonin reuptake inhibitor)
pemoline	Cylert	Stimulant
perphenazine	Etrafon, Triavil, Trilafon	Antipsychotic (phenothiazine)
phenelzine	Nardil	Antidepressant (monaomine oxidase inhibitor)
phentermine	Adipex-P, Fastin	Antiobesity
phosphatidylserine	BC-PS	Anti-Alzheimer's; cognition enhancer
physostigmine	Synapton SR	Cholinergic; cognition enhancer
pindolol	Visken	β-adrenergic receptor blocker (β-blocker or β-adrenergic antagonist)
pramipexole	Miapex	Antiparkinsonian
prazepam	Centrax	Antianxiety; benzodiazepine
prochlorperazine	Compazine	Antipsychotic
promazine	Sparine	Antipsychotic
propranolol	Inderal	Antianxiety; antihypertensive
protriptyline	Vivactil	Antidepressant (tricyclic)
quazepam	Doral	Hypnotic; benzodiazepine
quetiapine	Seroquel	Dopamine and serotonin (5-HT_2) antagonist; antipsychotic
remoxipride	Roxiam	Antipsychotic
risperidone	Risperdal	Antipsychotic
rizatriptan	Maxalt	5-$HT_{1D/1B}$ receptor agonist for migraine

*Not available in the U.S.

Drugs Used in the Treatment of Psychiatric and Neurological Disorders

Generic Name	Brand Name	Drug Use
ropinirole	Requip	Antiparkinsonian
roxindole		Antidepressant
sabeluzole		Treatment for dementia in Alzheimer's disease
selegiline, l-deprenyl	Eldepryl, Carbex	Antidepressant (monoamine oxidase inhibitor [MAOI-type B])
sertraline	Zoloft	Antidepressant (selective serotonin reuptake inhibitor)
sibutramine	Meridia	Antiobesity
stiripentol		Anticonvulsant
suronacrine		Cholinesterase inhibitor; anti-Alzheimer's
tacrine	Cognex	Anti-Alzheimer's; cognition enhancer
temazepam	Restoril	Hypnotic; benzodiazepine
thioridazine	Mellaril	Antipsychotic (phenothiazine)
thiothixene	Navane	Antipsychotic
tiagabine	Gabitril	Gamma-amino butyric acid (GABA) reuptake inhibitor; anticonvulsant
SB202026	Memric	Muscarinic M-1 partial agonist; anti-Alzheimer's
tolcapone		Enzyme inhibitor; adjunctive therapy with levodopa; antiparkinsonian
topiramate	Topamax	Anticonvulsant
tranylcypromine	Parnate	Antidepressant (monamine oxidase inhibitor)
trazodone	Desyrel	Antidepressant (atypical; selective serotonin reuptake inhibitor)
triazolam	Halcion	Hypnotic; benzodiazepine
trifluoperazine	Stelazine	Antianxiety; antipsychotic
triflupromazine	Vesprin	Antipsychotic (phenothiazine)
trihexyphenidyl	Artane	Anticholinergic
trimipramine	Surmontil	Antidepressant (tricyclic)
valproate	Depakene, Depakote	Anticonvulsant
velnacrine	Mentane	Cholinesterase inhibitor
venlafaxine	Effexor	Antidepressant
verapamil	Calan, Isoptin	Calcium channel inhibitors
vigabatrin	Sabril	Treatment for refractory epilepsy
xanomeline		M-1 agonist; anti-Alzheimer's
yohimbine	Yocon, Dayto Himbin, Yohimex	Sympatholytic
zatosetron		Antianxiety
ziprasidone	Zeldox	Antipsychotic
zolpidem	Ambien	Hypnotic (imidazopyridine)
zomatriptan	Zomig	Selective serotonin 5-$HT_{1D/1B}$ receptor agonist

Notes

We Want Your Feedback!

Please complete and submit your evaluation from this program so we may learn from your constructive feedback. Thank you!

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INSTRUMENTS

MDS -

Pittsberg

Zeldox
- EPS
- QTc
- 1 trial 7/10 pts. didn't show efficacy
- Geriatrics

Risperidone
- ~~EPS & TP~~
- orthostatic hypotention
- Narrow therapeutic window
- Prolactin elevation
- Adjust dose for renal impairment
- B.I.D
- Active metabolite
- peripheral edema - likely dose related
- QTProlongation
- High end dose

• Autoinhibition
- build UP
- Falls = Slow titrati

- OBRA < 2mg
- Eff. 2mg
↑ Safety Concerns

Quetiapine
- CYP450 3A4 inhibitors + Seroquel = Somnolence & orthostatic hypotention & Falls
- complicated dosing
- postural hypotention 13-15%
- Cataracts

/ Grapefruit juice Zithromax

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