

Determining the Incidence of Cognitive Impairment among Patients at a Community Mental Health Center :

A UCSF/FSA Collaboration

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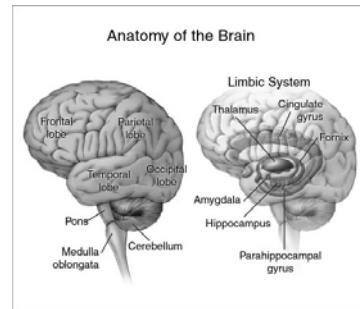
Outline for today

- ✓ Review of cognitive impairment
Methods, etiology, incidence
- ✓ Review study rationale
- ✓ Report on current findings
- ✓ Discussion/ Next steps

Overview of Cognitive Domains

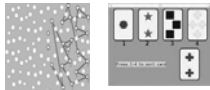
Intelligence	FS IQ, verbal IQ, performance IQ, etc
Memory	encoding, retrieval, recognition, etc.
Attention	sustained, divided, inhibition, etc.
Executive Functioning	Loss of set, perseverative errors, sequencing, etc
Visuospatial	Perception, gestalt, output, pull to stimuli
Language	semantic errors, neologisms, literal paraphasic errors, etc.

Localization of Cognitive Functions



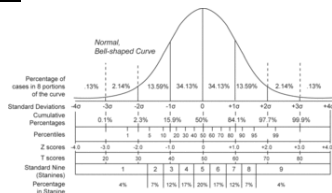
Methods of Neuropsychological Assessment

Development of Tests
Validation
Standardization



Interpretation of Scores

Normative Data
Age
Education
Culture
Gender
Practice effects



Common Uses of Neuropsychological Assessments

- ◆ Severity: Normal, MCI, Dementia
- ◆ Etiology: Clarify brain regions involved
- ◆ Progression: Quantify change over time
- ◆ Planning: Cognitive strengths/weaknesses

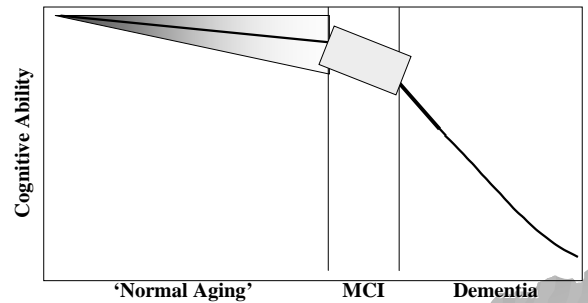
Cognitive Syndromes

Cognitively Normal

Mild Cognitive Impairment (MCI)
Cognitive Impairment No Dementia (CIND)

Dementia

Cognitive Impairment



Implications of Diagnosing Dementia

- ◆ Medical Power of Attorney
- ◆ Legal Power of Attorney
- ◆ Reporting to DMV
- ◆ Psychological effect on patient and families

Etiology of Cognitive Deficits

- ◆ What illness or factors are causing cognitive dysfunction?
- ◆ Two Broad Categories
 - Reversible
 - Irreversible

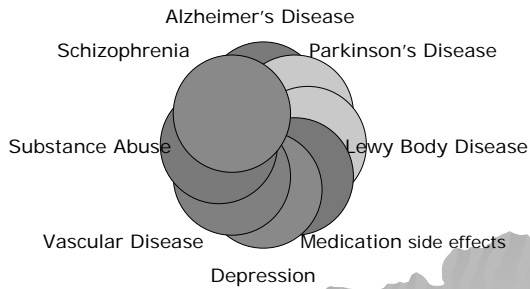
Reversible Dementias

- ◆ Intoxications
- ◆ Infections
- ◆ Metabolic disorders
- ◆ Major depression
- ◆ Brain tumors
- ◆ Head injuries
- ◆ NPH

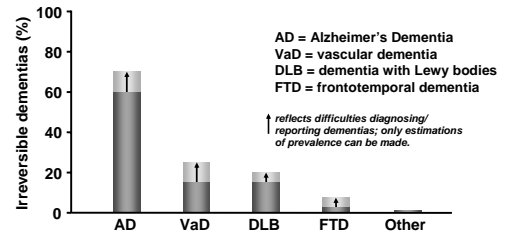
Irreversible Dementias

- ◆ Alzheimer's disease
- ◆ Multi-infarct or vascular dementia
- ◆ Parkinson's disease
- ◆ Lewy Body disease
- ◆ Creutzfeldt-Jakob disease
- ◆ Pick's disease- "FTD"
- ◆ Huntington's disease
- ◆ AIDS dementia complex
- ◆ Progressive aphasia

Potential Etiologies of Cognitive Impairments in Older Adults



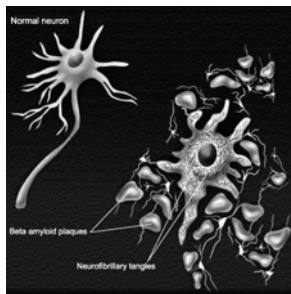
AD Is the Most Prevalent Type of Neurodegenerative Disease



Guttman R et al. *Arch Fam Med.* 1999;8:347-353.
McKeith IG et al. *Neurology.* 1996;47:1113-1124.
Cherrier MM et al. *J Am Geriatr Soc.* 1997;45:579-583.

Alzheimer's Disease Neurobiology

- ◆ Loss of brain cells and mass
- ◆ Neurofibrillary tangles
- ◆ Neuritic plaques
- ◆ Change in blood flow & glucose utilization

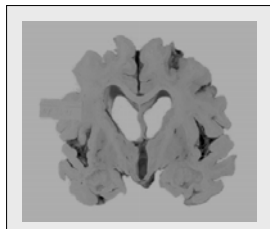
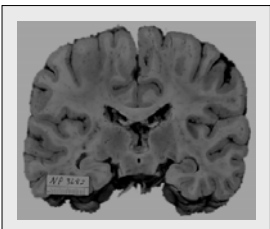


Alzheimer's Disease

- ◆ Cause unknown
- ◆ Age is biggest risk factor
- ◆ Disease can effect brain for years before symptoms show
- ◆ Genetic links
 - Mutations on chromosomes 1, 14, 21 increase risk as do possibly chromosomes 10, 12

Compare

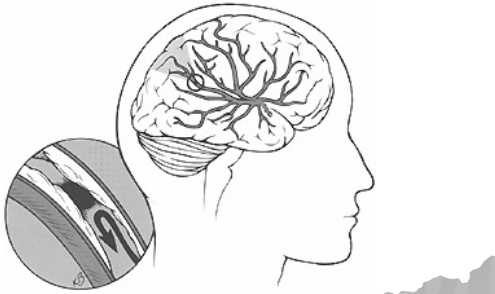
- ◆ This is the brain of a normal 70 year old
- ◆ This is the brain of a 70 year old with Alzheimer's Disease



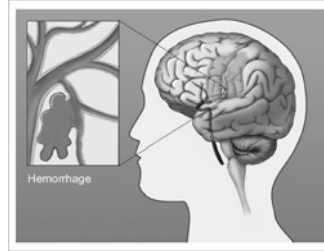
Cerebrovascular Disease

- ◆ Can involve cortical areas of the brain and/or subcortical areas
- ◆ Symptoms can vary widely depend on location of stroke

Cortical Ischemic Stroke



Cortical Hemorrhagic Stroke



- ◆ Approximately one out of five strokes are hemorrhagic
- ◆ Caused by a blood vessel breaking and leaking blood into or around the brain.
- ◆ This type of stroke is generally more serious than an ischemic stroke

Risk Factors for Cerebrovascular Disease

- ◆ High blood pressure
- ◆ Cigarette smoking
- ◆ Diabetes mellitus
- ◆ Carotid or other artery disease
- ◆ Peripheral artery disease
- ◆ Atrial fibrillation
- ◆ Other heart disease
- ◆ Sickle cell disease
- ◆ High blood cholesterol
- ◆ Poor diet
- ◆ Physical inactivity and obesity

Review of the Intersection of Psychiatric Symptoms and Neurodegenerative Disease

- ◆ Cognitive deficits are common in LLD; found in up to 60% of LLD pts
- ◆ Depression is common in CIND; 20-40% of pts

Why is this?

- ◆ LLD causes cognitive impairments- *LLD causes damage to brain and represents an independent risk factor for dementia*
- ◆ LLD and cognitive deficits caused by underlying disease process- *prodrome for dementia*

Rationale for study

- ◆ Cognitive impairments (CI) among older adults are commonly associated with:
 - neurological disorders
 - psychiatric disorders
 - substance abuse
 - medical illness
 - medication use

CI in older adults have been linked to:

- ◆ Poor utilization of outpatient mental health services
- ◆ Poor medical and psychiatric treatment adherence
- ◆ Decreased the effectiveness of psychiatric interventions
- ◆ Mortality and morbidity

Why Community mental health agencies?

- ◆ Typically offer psychological interventions and case management services to individuals with a diverse number of psychiatric and/or substance abuse histories.
- ◆ The individuals served at these facilities commonly have numerous chronic psychiatric illnesses, substance abuse histories, and medical comorbidities

- ◆ Few studies have examined the prevalence of cognitive impairments in community mental health agencies.
- ◆ Establishing the incidence of cognitive impairment among this vulnerable patient group is the first step in determining the impact of these deficits on mental health interventions

Study Update

- ◆ Participants include 48 older adults (ages 60 and older) recruited from a large community mental health agency in San Francisco.
- ◆ 98% of sample with DSM Dx; MDD, Schizophrenia most common; Multiple dx's common- chronic mental illness
- ◆ Sixty-three percent of the sample lived independently, 26% lived in board and care facilities, and 11% lived in supportive senior centers.
- ◆ Gender: 55% female
- ◆ Ethnicity: 58% White, 16% Hispanic, 16% African American, 3% Asian, 8% "other"
- ◆ Mean Age: 69.1 years (SD = 7.8)
- ◆ Mean Education: 13.4 years (SD= 2.3)

Measures Utilized

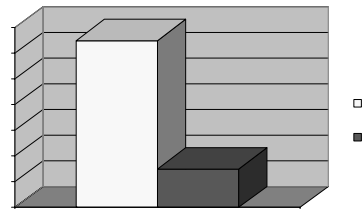
- ◆ MMSE:
- ◆ Dementia Rating Scale
- ◆ Hamilton Depression Scale
- ◆ CAGE Questionnaire (0-4; 0-8)
- ◆ Clinical Dementia Rating Scale
- ◆ Stroop Color Word Test

Mean Administration time= 50 minutes

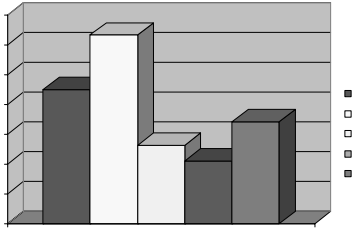
Data Analytic Plan

- ◆ Cognitive deficits = total DRS < 11th percentile compared to age and education matched peers.
- ◆ Chart review: Cog Dx and Psychiatric Dx
- ◆ Multiple regression analyses were conducted to determine if demographic variables and clinical variables (HAM D total score; CAGE total score) were predictors of cognitive impairment.
- ◆ Cost of Service Data

Preliminary Results: Incidence and Documentation of Cognitive Impairment (n=48)



Incidence of Specific Types of Cognitive Impairments (n=48)



Preliminary Results (cont)

- ◆ 21% showed sig depressive symptoms (HAM D > 19)
- ◆ 26% reported symptoms suggestive of past or present substance abuse histories (CAGE >2)

Demographics and Psychiatric Status Do Not Predict Cognitive Impairment

Table 3. Summary of Multiple Regression Analysis for Cognitive Performance

Variable	Standardized Beta	t	p
Age	.151	.605	.554
Education	.137	.545	.594
Ethnicity	.405	1.638	.122
HAM D	.009	.035	.972
CAGE	.041	.158	.876

HAM D= Hamilton Depression Scale, CAGE

Summary

- ◆ CI common; difficult to recognize
- ◆ CI not associated with Psych dx or other demographic variables
- ◆ Preliminary results suggest strong relationship to cost of service utilization