



**Journal Club, 27 novembre 2009**

# ***“Novità dal congresso della GSA”***

**(Renzo ROZZINI)**

## **Delirium From Transdermal Scopolamine in an Elderly Woman**

*To the Editor.*—Perhaps too little attention is paid by practitioners to central anticholinergic effects of drugs in the elderly.

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**MINIMUM GERIATRIC COMPETENCIES for Emergency Medicine Residents**  
**The Portal of Geriatric Online Education (POGOe)(2009)**

***The graduating emergency medicine resident, in the context of a specific older patient scenario (real or simulated), must be able to:***

**ATYPICAL PRESENTATION OF DISEASE**

**1**

Generate an age-specific differential diagnosis for elder patients presenting to the ED with general weakness, dizziness, falls, or altered mental status.

**2**

Generate a differential diagnosis recognizing that signs and symptoms such as pain and fever may be absent or less prominent in elders with acute coronary syndromes, acute abdomens, or infectious processes.

**3**

Document consideration of adverse reactions to medications, including drug-drug and drug-disease interactions, as part of the initial differential diagnosis.

## **TRAUMA INCLUDING FALLS**

### **4**

In patients who have fallen, evaluate for precipitating causes of falls such as medications; alcohol use/abuse, gait or balance instability; medical illness and/or deterioration of medical condition.

### **5**

Assess for gait instability in all ambulatory fallers; if present, ensure appropriate disposition and follow up including attempt to reach primary care provider.

### **6**

Demonstrate ability to recognize patterns of trauma (physical/sexual, psychological, neglect/abandonment) that are consistent with elder abuse. Manage the abused patient in accordance with the rules of the state and institution.

### **7**

Institute appropriate early monitoring and testing with the understanding that elders may present with muted signs and symptoms, (e.g., absent pain and neurologic changes) and are at risk for occult shock.

## **COGNITIVE AND BEHAVIORAL DISORDERS**

### **8**

Assess whether an elder is able to give an accurate history, participate in determining the plan of care, and understands discharge instructions.

### **9**

Assess and document current mental status and any change from baseline in every elder with special attention to determining if delirium exists or has been superimposed on dementia.

### **10**

Emergently evaluate and formulate an age-specific differential diagnosis for elders with new cognitive or behavioral impairment, including self neglect, and initiate a diagnostic work-up to determine the etiology, and initiate treatment.

### **11**

Assess and correct (if appropriate) causative factors in agitated elders such as untreated pain, hypoxia, hypoglycemia and use of irritating tethers (defined as monitor leads, blood pressure cuff, pulse ox, IV and Foley), environmental factors (light, temperature), disorientation.

## **EMERGENT INTERVENTION MODIFICATIONS**

### **12**

Recommend therapy based on the actual benefit to risk ratio, including but not limited to acute myocardial infarction, stroke and sepsis, so that age alone does not exclude elders from any therapy.

### **13**

Identify and implement measures that protect elders from developing iatrogenic complications common to the Emergency Department including invasive bladder catheterization, spinal immobilization and central line placement.

## **MEDICATION MANAGEMENT**

### **14**

Prescribe appropriate drugs and dosages considering the current medication, acute and chronic diagnoses, functional status, and knowledge of age related physiologic changes (renal function, CNS sensitivity).

### **15**

Search for interactions and document reasons for use when prescribing drugs which present high risk either alone, or in drug-drug or drug-disease interactions (e.g. benzodiazapines, digoxin, insulin, NSAID's, opioids, and warfarin).

### **16**

Explain all newly prescribed drugs to elders and caregivers at discharge assuring they understand how and why the drug should be taken, the possible side effects, and how and when the drug should be stopped.

## **TRANSITIONS OF CARE**

### **17**

Document history obtained from skilled nursing or extended care facilities of the acute events necessitating ED transfer including goals of visit, medical history, medications, allergies, cognitive and functional status, advance care plan and responsible PCP.

### **18**

Provide skilled nursing or extended care facilities and/or PCP with ED visit summary and plan of care, including follow-up when appropriate.

### **19**

With recognition of unique vulnerabilities in elders; assess and document suitability for discharge considering the ED diagnosis, including cognitive function, the ability in ambulatory patients to ambulate safely, availability of appropriate nutrition/social support, and the availability of access to appropriate follow-up therapies.

### **20**

Select and document the rationale for the most appropriate available disposition (home, extended care facility, hospital) with the least risk of the many complications commonly occurring in elders during inpatient hospitalizations.

## **PAIN MANAGEMENT / PALLIATIVE CARE**

**21**

Rapidly establish and document elder's goals of care for those with a serious or life threatening condition and manage accordingly.

**22**

Assess and provide ED management for pain and key non pain symptoms based on the patient's goals of care.

**23**

Know how to access hospice care and how to manage elders in hospice

## **EFFECT OF CO-MORBID CONDITIONS**

### **24**

Assess and document the presence of co-morbid conditions (e.g. pressure ulcers, cognitive status, falls in the past year, ability to walk and transfer, renal function, and social support) and include them in your medical decision making and plan of care.

### **25**

Develop plans of care that anticipate and monitor for predictable complications in the patients' condition (e.g., GI bleed causing ischemia).

### **26**

Communicate with patients with hearing/sight impairments, speech difficulties, aphasia and cognitive disorders (e.g. using family/friend, writing).

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## The Clinical Course of Advanced Dementia

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## **BACKGROUND**

Dementia is a leading cause of death in the United States but is underrecognized as a terminal illness. The clinical course of nursing home residents with advanced dementia has not been well described.

## **METHODS**

We followed 323 nursing home residents with advanced dementia and their health care proxies for 18 months in 22 nursing homes. Data were collected to characterize the residents' survival, clinical complications, symptoms, and treatments and to determine the proxies' understanding of the residents' prognosis and the clinical complications expected in patients with advanced dementia.

**Table 1. Baseline Characteristics of Nursing Home Residents with Advanced Dementia.\***

Characteristic	All Residents (N = 323)
Age — yr	85.3±7.5
Female sex — no. (%)	276 (85.4)
White race — no. (%)†	289 (89.5)
Married — no. (%)	64 (19.8)
Median length of stay — yr	3.0
Median time from dementia diagnosis to study entry — yr	6.0
Lived in special care unit for dementia — no. (%)	141 (43.7)
Cause of dementia — no. (%)	
Alzheimer's disease	234 (72.4)
Vascular disease	55 (17.0)
Other	41 (12.7)
Coexisting conditions — no. (%)	
Active cancer	4 (1.2)
Chronic obstructive lung disease	36 (11.1)
Congestive heart failure	57 (17.6)
Score on Bedford Alzheimer's Nursing Severity Subscale‡	21.0±2.3
Score of 0 on Test for Severe Impairment — no. (%)§	233 (72.1)

# BEDFORD ALZHEIMER NURSING SEVERITY SCALE (BANSS)

(Volicer L., Hurley A.C., Lathi D.C., Kowall N.W., J.Gerontology, 49:M223-M226, 1994)

## ABBIGLIAMENTO

- [1] abitualmente indipendente
- [2] richiede assistenza minima
- [3] richiede discreta assistenza ma non è totalmente dipendente
- [4] completamente dipendente

## SONNO

- [1] ciclo sonno-veglia abitualmente regolare
- [2] talvolta irregolare
- [3] frequentemente irregolare
- [4] ciclo sonno-veglia severamente sovvertito

## LINGUAGGIO

- [1] conservato
- [2] lieve incapacità a parlare
- [3] saltuaria incapacità
- [4] afasia completa

## ALIMENTAZIONE

- [1] indipendente
- [2] richiede assistenza minima e/o sollecitazione
- [3] richiede moderata assistenza e/o sollecitazione
- [4] completamente dipendente

## MOBILITÀ

- [1] deambula sempre in modo indipendente
- [2] talvolta deambula in modo indipendente
- [3] deambula solo con aiuto
- [4] incapace a deambulare anche con aiuto

## MUSCOLATURA

- [1] molto sciolta con motilità articolare pienamente conservata
- [2] parzialmente sciolta con lieve compromissione della motilità articolare
- [3] parzialmente rigida
- [4] contratta

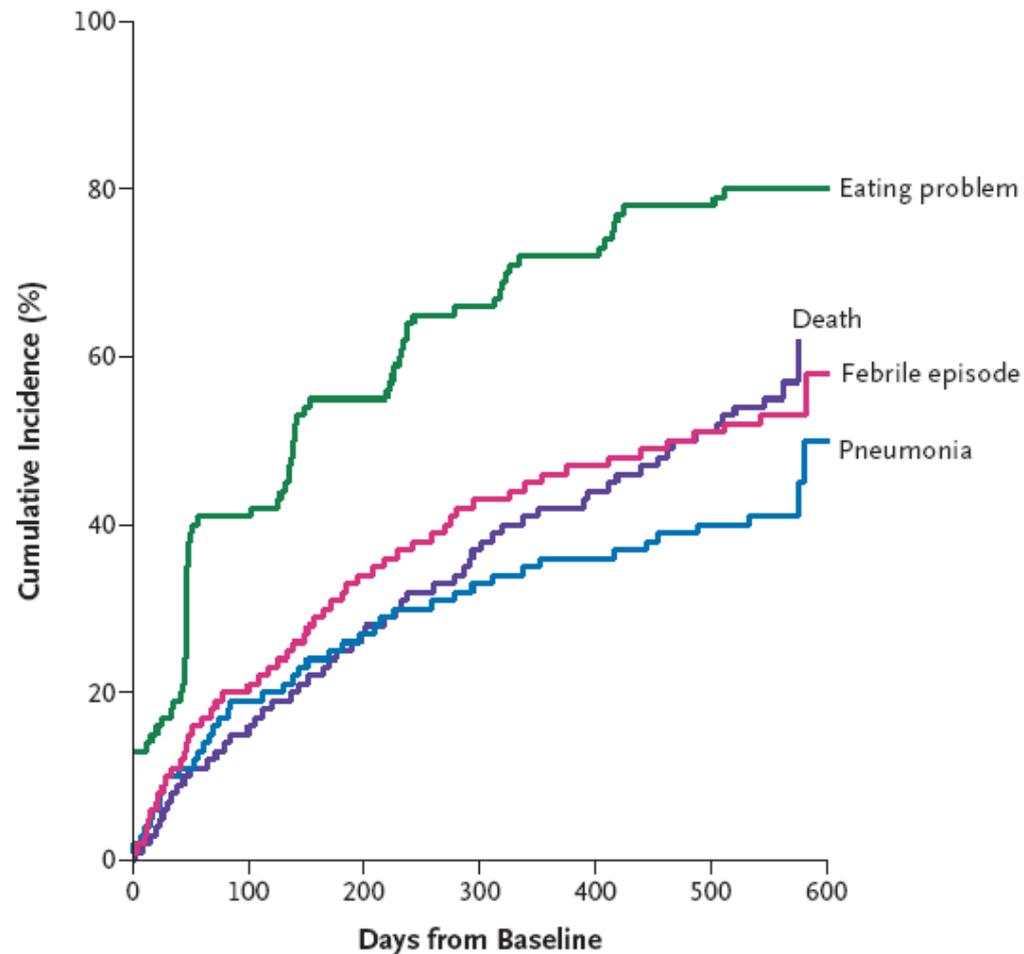
## CONTATTO OCULARE

- [1] mantenuto
- [2] abitualmente mantenuto
- [3] raramente mantenuto
- [4] completamente perduto

PUNTEGGIO COMPLESSIVO \_\_\_\_\_/28

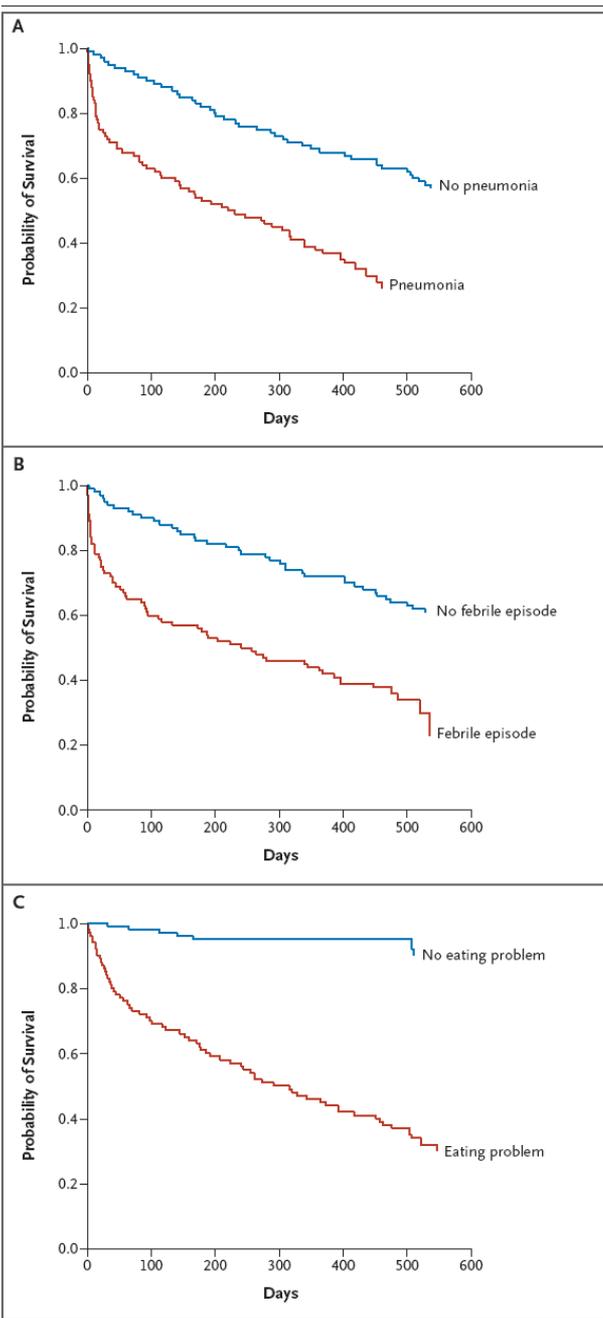
## RESULTS

Over a period of 18 months, 54.8% of the residents died. The probability of pneumonia was 41.1%; a febrile episode, 52.6%; and an eating problem, 85.8%. After adjustment for age, sex, and disease duration, the 6-month mortality rate for residents who had pneumonia was 46.7%; a febrile episode, 44.5%; and an eating problem, 38.6%. Distressing symptoms, including dyspnea (46.0%) and pain (39.1%), were common. In the last 3 months of life, 40.7% of residents underwent at least one burdensome intervention (hospitalization, emergency room visit, parenteral therapy, or tube feeding). Residents whose proxies had an understanding of the poor prognosis and clinical complications expected in advanced dementia were much less likely to have burdensome interventions in the last 3 months of life than were residents whose proxies did not have this understanding (adjusted odds ratio, 0.12; 95% confidence interval, 0.04 to 0.37).



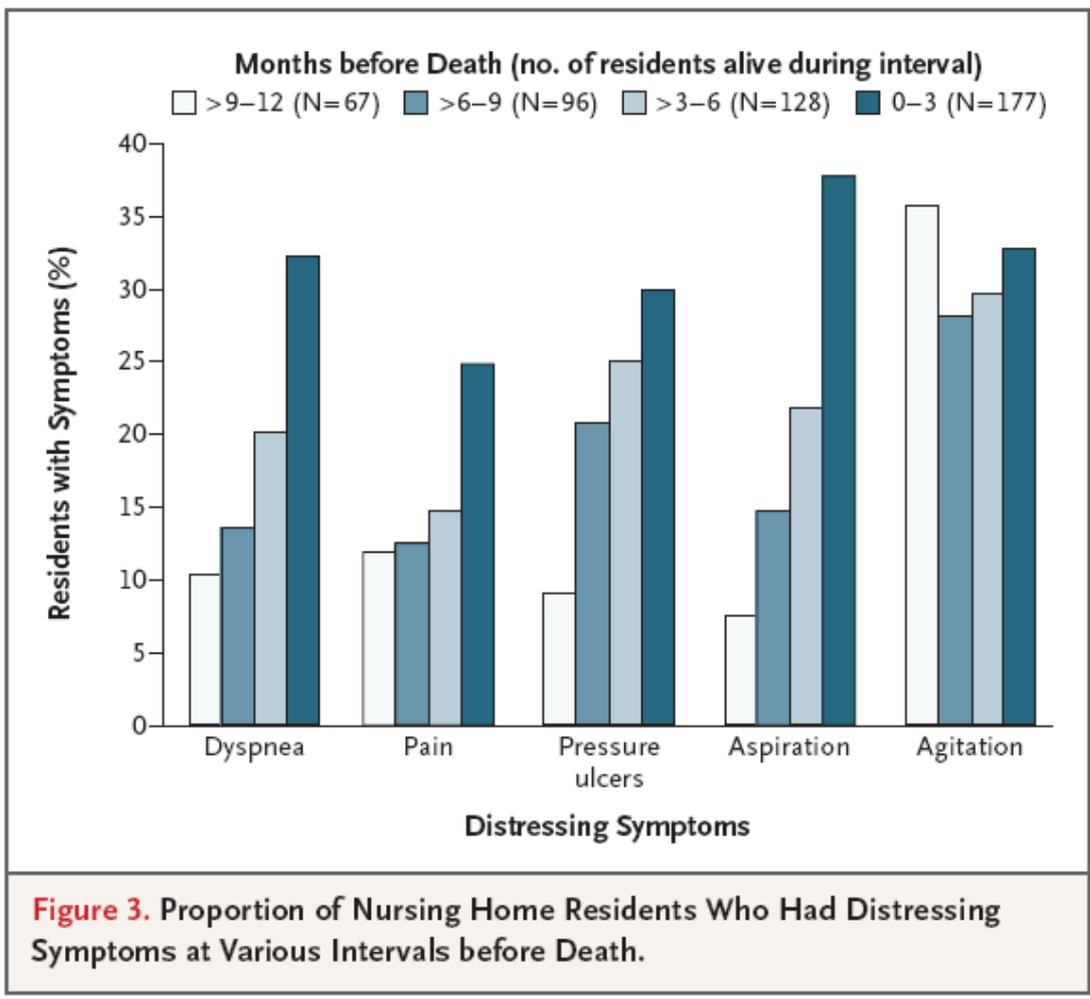
**Figure 1.** Overall Mortality and the Cumulative Incidences of Pneumonia, Febrile Episodes, and Eating Problems among Nursing Home Residents with Advanced Dementia.

Overall mortality for the nursing home residents during the 18-month course of the study is shown. The residents' median age was 86 years, and the median duration of dementia was 6 years; 85.4% of residents were women.



**Figure 2. Survival after the First Episode of Pneumonia, the First Febrile Episode, and the Development of an Eating Problem.**

Panel A shows the results of the survival analysis for pneumonia, Panel B the results for a febrile episode, and Panel C the results for an eating problem. The red line in each panel shows survival after development of these complications. The blue line in each panel shows the estimated survival before the complication developed or in its absence (for residents in whom the complication never developed). All curves are presented for the median age (86 years), median duration of dementia (6 years), and distribution according to sex (85.4% women).



## **CONCLUSIONS**

Pneumonia, febrile episodes, and eating problems are frequent complications in patients with advanced dementia, and these complications are associated with high 6-month mortality rates. Distressing symptoms and burdensome interventions are also common among such patients. Patients with health care proxies who have an understanding of the prognosis and clinical course are likely to receive less aggressive care near the end of life.

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ORIGINAL INVESTIGATION

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# Impact of a Comanaged Geriatric Fracture Center on Short-term Hip Fracture Outcomes

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*Arch Intern Med. 2009;169(18):1712-1717*

**Background:** Hip fractures are associated with substantial morbidity and mortality for older adults. Patients sustaining hip fractures usually have comorbid conditions that may benefit from comanagement by geriatricians and orthopedic surgeons.

**Methods:** The Geriatric Fracture Center (GFC) is part of a community teaching hospital. Patients are comanaged daily by a geriatrician and orthopedic surgeon, emphasizing total quality management, timely treatment, and standardized care. We reviewed medical records to compare process and outcome measures in the GFC with a local institution that did not have a fracture management service. Patients 60 years or older admitted for a proximal femur fracture from May 1, 2005, to April 30, 2006, were included; pathological, recurrent, high-energy, peri-prosthetic, and nonoperative fractures were excluded.

## DESCRIPTION OF GFC AND UC MODELS

The GFC model of care is a standardized program in which each patient is comanaged by faculty geriatricians.<sup>9</sup> Standardized order sets are used at each stage of care. Early surgical intervention is emphasized as a goal of care. A dedicated fracture operating room was not available when this study was conducted. The GFC is staffed by a mixture of faculty orthopedic surgeons, private practice orthopedic surgeons, orthopedic house staff, and faculty geriatricians. Subspecialty consultations are minimized in the GFC model. The program is located in a 261-bed, community-based teaching hospital. It is loosely affiliated with many assisted-living facilities and nursing homes as a preferred site for geriatric admissions.

The UC model does not have a standardized approach to care. Hospitalists are consulted for the management of medical conditions and complications as they occur. The UC program has a designated fracture operating room available each weekday, permitting early fracture surgery. The UC model is staffed by faculty orthopedic surgeons, orthopedic house staff, and faculty hospitalists. Both models share anesthesiologists drawn from the same department. Although faculty orthopedic surgeons in both models are members of the same department, the surgeons did not work in both hospitals during the period of this study. This program is based at a tertiary care hospital with an overlapping catchment area.

**Table 1. Characteristics of Patients at Baseline**

<b>Characteristic</b>	<b>GFC (n=193)</b>	<b>Usual Care (n=121)</b>	<b>P Value</b>
Age, mean (SD), y	84.7 (7.8)	81.6 (8.7)	.002
Male, %	20.7	25.6	.31
White, %	96.9	96.7	>.99
Community dwelling, %	39.4	81.8	<.001
Charlson comorbidity score, mean (SD)	3.4 (2.2)	2.6 (1.6)	<.001
Dementia, %	53.9	21.5	<.001

**Results:** Geriatric Fracture Center patients (n = 193) were significantly older, were less likely to reside in the community, and had more comorbid conditions and dementia than usual care patients (n = 121). Despite baseline differences, GFC patients, compared with usual care patients, had shorter times to surgery (24.1 vs 37.4 hours), fewer postoperative infections (2.3% vs 19.8%), fewer complications overall (30.6% vs 46.3%), and shorter length of stay (4.6 vs 8.3 days). Compared with GFC patients, physical restraint use was significantly higher in usual care patients (0% vs 14.1%). After we adjusted for baseline characteristics, patients treated in the GFC had shorter times to surgery, shorter length of stay, fewer cardiac complications, and fewer cases of thromboembolism, delirium, and infection. There was no difference in in-hospital mortality or 30-day readmission rate.

**Table 2. Outcomes in the Geriatric Fracture Center (GFC) and Usual Care**

Outcome	Unadjusted			Adjusted <sup>a</sup>	
	GFC (n=193)	Usual Care (n=121)	P Value	Coefficient <sup>b</sup> (95% Confidence Interval)	P Value
Time to surgery, mean (SD), h	24.1 (17.0)	37.4 (63.8)	.007	-12.93 (-2.19 to -23.68)	.02
Restraint use, %	0	14.1	<.001	... <sup>c</sup>	... <sup>c</sup>
Length of stay, mean (SD), d	4.6 (3.3)	8.3 (6.3)	<.001	-3.74 (-2.56 to -4.91)	<.001
In-hospital mortality, %	1.6	2.5	.68	0.17 (0.02 to 1.14)	.07
30-d Readmission rate, %	9.8	13.2	.35	0.52 (0.23 to 1.18)	.12
Complications overall, %	30.6	46.3	.005	0.26 (0.14 to 0.47)	<.001
Delirium, %	24.4	32.2	.13	0.27 (0.13 to 0.53)	<.001
Postoperative infection, % <sup>d</sup>	2.3	19.8	<.01	0.04 (0.01 to 0.13)	<.001
Renal insufficiency, %	6.2	7.4	.67	0.70 (0.25 to 1.97)	.50
Bleeding, % <sup>d</sup>	0	3.3	.02	... <sup>c</sup>	... <sup>c</sup>
Cardiac, % <sup>d</sup>	1.0	7.4	.004	0.15 (0.03 to 0.83)	.03
Hypoxia, %	6.7	14.1	.03	0.22 (0.09 to 0.55)	.001
Thromboembolism, %	0.5	5.0	.01	0.07 (0.01 to 0.77)	.03
Stroke, %	0.5	0	>.99	... <sup>c</sup>	... <sup>c</sup>

<sup>a</sup> Outcomes are adjusted for age, race, sex, dementia, Charlson comorbidity score excluding dementia, and residence prior to admission (community vs not). Coefficients assess the GFC risk, with usual care as the reference. Continuous outcomes (time to surgery and length of stay) are evaluated via linear regression modeling. Dichotomous outcomes are evaluated via logistic regressions.

<sup>b</sup> Coefficient denotes regression coefficients for linear regressions (outcomes of time to surgery and length of stay) and odds ratios for logistic regressions (all other outcomes).

<sup>c</sup> Unstable due to one site not experiencing outcome

<sup>d</sup> Postoperative infection included urinary tract infection, pneumonia, and surgical site infection. Bleeding included gastrointestinal, retroperitoneal, intracranial bleeding, hemorrhagic stroke, or wound hematoma. Cardiac included any new arrhythmia, acute myocardial infarction, or congestive heart failure.

**Conclusion:** Comanagement by geriatricians and orthopedic surgeons, combined with standardized care, leads to improved processes and outcomes for patients with hip fractures.

*Arch Intern Med.* 2009;169(18):1712-1717

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**GUIDELINES**

# Depression in adults, including those with a chronic physical health problem: summary of NICE guidance

Stephen Pilling,<sup>1,2</sup> Ian Anderson,<sup>3</sup> David Goldberg,<sup>4</sup> Nicholas Meader,<sup>5</sup> Clare Taylor,<sup>5</sup> On behalf of the two guideline development groups

## Identification and assessment

- Be alert to possible depression (particularly in people with a history of depression or a chronic physical health problem with associated functional impairment) and consider asking the following two questions:
  - “During the last month, have you often been bothered by ‘feeling down,’ depressed, or hopeless?”
  - “During the last month, have you often been bothered by having little interest or pleasure in doing things?”
- When assessing a person who may have depression, conduct a comprehensive assessment that does not rely simply on a symptom count. Take into account both the degree of functional impairment and/or disability associated with the possible depression to determine severity (as defined in DSM-IV) and establish the duration of the episode.

## Persistent subthreshold depressive symptoms or mild to moderate depression

- For people with persistent “subthreshold symptoms of depression” (symptoms that are below the DSM-IV criteria for major depression) or mild to moderate depression (with or without a chronic physical health problem) and for those with subthreshold depressive symptoms that complicate the care of the physical health problem, consider offering one or more of the following low intensity psychosocial interventions, guided by the person’s preference:
  - Individual, guided self help based on principles of cognitive behavioural therapy (CBT)
  - Computerised cognitive behavioural therapy
  - A structured, group based physical activity programme.

For people with a chronic physical health problem, also offer group based peer support (self help) programmes.

- Do not use antidepressants routinely to treat persistent subthreshold depressive symptoms or mild depression in people without a chronic physical health problem, but consider antidepressants for those with:
  - A history of moderate or severe depression, or
  - Subthreshold depressive symptoms that have

- been present for at least two years, or
- Subthreshold depressive symptoms or mild depression persisting after other interventions
- Do not use antidepressants routinely to treat subthreshold depressive symptoms or mild depression in people with a chronic physical health problem, but consider antidepressants for those with:
  - A history of moderate or severe depression, or
  - Mild depression complicating the care of the physical health problem, or
  - Subthreshold depressive symptoms that have been present for at least two years, or
  - Subthreshold depressive symptoms or mild depression persisting after other interventions.

### Starting antidepressants in people with depression and chronic physical health problem

- When prescribing an antidepressant, take into account:
  - Any additional physical health disorders
  - The side effects of antidepressants, which may affect the underlying physical disease (in particular, selective serotonin reuptake inhibitors may result in or exacerbate hyponatraemia, especially in older people)
  - The absence of evidence to support the use of specific antidepressants for people with particular chronic physical health problems
  - Interactions with other medications.
- Prescribe a selective serotonin reuptake inhibitor in generic form first, unless there are interactions with other drugs; consider using citalopram or sertraline as they are less likely to lead to interactions.



### Moderate or severe depression

- For people with moderate or severe depression without a chronic physical health problem, provide antidepressant medication combined with high intensity psychological treatment (CBT or interpersonal therapy).
- For people who first present with moderate depression and a chronic physical health problem, offer group based CBT (or individual CBT for those who decline group based CBT or for whom it is not appropriate, or where a group is not available) or behavioural couples therapy.
- For people who first present with severe depression and a chronic physical health problem, consider offering individual CBT combined with antidepressant medication.

## Sequencing treatments after initial inadequate response

- When reviewing drug treatment for a person with depression whose symptoms have not adequately responded to initial pharmacological interventions:
  - Check adherence to, and side effects from, initial treatment
  - Increase the frequency of appointments, monitoring outcomes with a validated outcome measure (such as the hospital anxiety and depression scale<sup>10</sup> or the patient health questionnaire-9 (PHQ-9))<sup>11</sup>
- Be aware that using a single antidepressant rather than combination medication (two antidepressants used together) or augmentation (a non-antidepressant such as lithium or an atypical antipsychotic used with an antidepressant) is usually associated with fewer side effects
  - Consider reintroducing previous treatments that have been inadequately delivered or adhered to, including increasing the dose
  - Consider switching to an alternative antidepressant.
- When switching to another antidepressant, be aware that the evidence for the relative advantage of switching either within or between classes is weak. Consider switching to:
  - First, a different selective serotonin reuptake inhibitor or a better tolerated, newer generation antidepressant
  - Subsequently, an antidepressant of a different pharmacological class that may be less well tolerated—for example, venlafaxine, a tricyclic antidepressant, or a monoamine oxidase inhibitor
  - In people with a chronic physical health problem be aware of drug interactions.

### Continuation and relapse prevention

- Support and encourage people who have benefited from taking an antidepressant to continue medication for at least six months after remission of an episode.
- Offer people with depression (without a chronic physical health problem) who are considered to be at substantial risk of relapse or who have residual symptoms one of the following psychological interventions:
  - Individual CBT (for those who have relapsed despite antidepressants or who have a history of depression and residual symptoms despite treatment)
  - Mindfulness based cognitive therapy (for those who are currently well but have experienced three or more previous episodes of depression)

People with chronic physical health problem and moderate to severe depression not responding to treatment

- Consider collaborative care for people with moderate to severe depression and a chronic physical health problem with associated functional impairment whose depression has not responded to initial psychological interventions (CBT or behavioural couples therapy), pharmacological treatment, or a combination of both of these.
- Such care should include case management supervised by a senior mental health professional, close collaboration between primary and secondary physical health services, a range of interventions consistent with those recommended in this guideline (including patient education, psychological and pharmacological interventions, and medication management), and long term coordination of care and follow-up.

### Effective delivery of interventions for depression

- All interventions for depression should be delivered by competent practitioners.
- Base psychological and psychosocial interventions on the relevant treatment manuals, which should guide the structure and duration of the intervention.
- Practitioners should consider using competence frameworks from the relevant treatment manuals, and for all interventions they should:
  - Receive regular, high quality supervision
  - Use routine outcome measures and involve the person with depression in reviewing treatment efficacy
  - Monitor and evaluate adherence to treatment and practitioner competence.

# Functional Status Assessment in the Preoperative Evaluation of Older Adults

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Preeti N. Malani, MD, MSJ

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JAMA, October 14, 2009—Vol 302, No. 14

**M**ANY COMMON SURGICAL PROCEDURES SUCH AS spinal fusion, coronary artery bypass grafting, and arthroplasty are routinely performed on older adults. Although such procedures can enhance quality and duration of life, adverse events related to the procedure and postoperative period are key considerations. Important complications include delirium, infection, and cardiac events. Development of these and other complications are associated with increased length of stay, increased rate of discharge to chronic care facilities, and increased mortality. Although age has been considered a primary predictor of surgical outcomes, preoperative functional status is likely a better surrogate for postoperative risk.

Delirium is a major concern for older patients. Although risk factors for postoperative delirium are well defined, relatively few patients receive targeted interventions for prevention.<sup>1</sup> If preoperative evaluation helped identify patients with poor functional status (cognitive and physical impairment predicts delirium), these individuals might benefit from specific environmental and pharmacologic interventions.<sup>1</sup> Although some institutions have addressed delirium prevention in a proactive, multidisciplinary manner, wide-scale implementation lags.

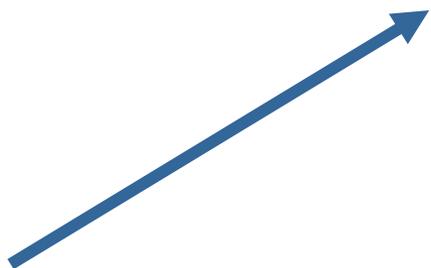
Another important complication is surgical site infection (SSI). Besides increases in length of stay and health care costs associated with SSI, treatment can require additional surgical procedures and extended antimicrobial therapy.<sup>2,3</sup> The resulting immobility often contributes to poor functional outcomes, thereby potentially reducing any palliative benefit of surgery.

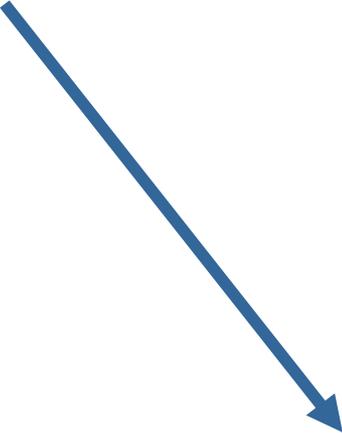
Even though age has been recognized as a risk factor for infection, the association has traditionally been attributed to immune senescence and patient comorbidities. Compelling evidence for a link between impaired functional status and SSI was recently demonstrated by Anderson et al,<sup>4</sup> who reviewed 141 345 operative procedures, examining risk factors for the development of methicillin-resistant *Staphylococcus aureus* (MRSA) SSI. The need for assistance with 3 or more activities of daily living (ADLs) was inde-

pendently associated with an increased risk of MRSA SSI, an association that persisted after stratifying patients by age.<sup>4</sup>

Despite increasing evidence suggesting that impaired functional status is associated with poor postoperative outcomes, the exact connection remains elusive. For instance, development of MRSA SSI is often preceded by MRSA colonization. Yet among older adults who develop SSI, it is unclear whether these patients are colonized with MRSA prior to their operation because of previous health care exposure or whether poor functional status results in increased length of stay and MRSA exposure postoperatively. Although decolonization strategies have been explored for SSI prevention, randomized studies have failed to show consistent benefit.<sup>5,6</sup>

As the number of older adults undergoing major operative procedures continues to increase, several critical changes must occur to address the care needs of this expanding population.





## **Routine Preoperative Functional Assessment**

Although generations of surgeons have observed the association between older age and surgical complications, formal incorporation of preoperative functional status has not occurred. While significant resources are expended to assess cardiovascular risk, most surgeons do not routinely measure baseline physical and cognitive function. Preoperative cardiac risk stratification includes a brief assessment of exercise capacity and mobility, but this evaluation should be expanded.

Some suggested measures include the timed up-and-go<sup>7</sup> test of mobility and the Mini-Cog<sup>8</sup> screen for cognitive impairment, along with a review of ADLs and instrumental ADLs.<sup>9</sup> These tests require only a few minutes to administer and provide objective information that can aid in patient and family counseling regarding risks of surgery as well as postoperative care planning.

## **Incorporation of Functional Measures Into Research**



Although functional and cognitive impairment is common among older adults, the influence of such deficits on operative outcomes remains largely unexplored. Prospective studies for prevention of adverse events associated with surgical procedures are necessary. Essential to these steps is the need to improve the understanding of the association between debility and adverse events. While mortality rates are high among older adults who experience serious adverse outcomes, the effects of such complications on long-term physical and cognitive functional status and post-discharge care needs is unknown. Functional status should be considered both as an outcome and as a risk factor in research studies.<sup>10</sup> As such, clinical investigators should move beyond just recording short- and long-term mortality and instead measure length of stay, the need for long-term care, the incidence of delirium, and additional functional loss as end points.

**Riscoprire la VMD!!!**