

Review: Delirium predicts 12-month mortality independent of dementia status

Fick DM, Agostini JV, Inouye SK. Delirium superimposed on dementia: a systematic review. *J Am Geriatr Soc.* 2002;50:1723-32.

QUESTIONS

What is the outcome for patients with delirium superimposed on dementia? Is geriatric consultation better than usual care for reducing delirium in patients with delirium superimposed on dementia?

DATA SOURCES

Studies were identified by searching MEDLINE (1966 to February 2002), conference proceedings, personal communications, and reviewing reference lists of published studies and books.

STUDY SELECTION

Studies were selected if they included data on patients with delirium superimposed on dementia, had a validated operational definition or measure of dementia and delirium, reported actual data on patients with delirium and dementia, and reported primary data.

DATA EXTRACTION

Data were extracted on population, sample size, patient age, dementia and delirium measure, study design, prevalence of delirium on dementia, and outcomes. Study quality

was assessed using a rating scale of 8 questions scored according to an answer of yes, partly yes, and no.

MAIN RESULTS

14 studies met the inclusion criteria. 1 randomized controlled trial (126 patients with hip fracture) comparing a geriatric consultation intervention with usual care showed that patients in the consultation group had greater reduction in delirium than did those in the usual care group (Table). In a prospective observational study (361 patients) where more patients had delirium with dementia than delirium alone (74% vs 24%), 12-month mortality was higher in patients with delirium without dementia. Delirium predicted 12-month mortality independent of dementia status (unadjusted hazard ratio

[HR] 3.44, {[95% CI 2.05 to 5.75]}, and was associated with a 2-fold increase in mortality during the 12-month follow-up (adjusted HR 2.11, CI 1.18 to 3.77)*.

CONCLUSIONS

Delirium is a predictor of 12-month mortality, independent of dementia status. A geriatric consultation intervention reduced delirium more than usual care in patients with delirium superimposed on dementia.

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*McCusker J, Cole M, Abrahamowicz M, Primeau F, Belzile E. *Arch Intern Med* 2002; 162:457-463.

Consultation vs usual care for delirium superimposed on dementia at 12 months (1 trial, 126 patients with hip fracture)†

Outcome	Consultation	Usual care	RRR (95% CI)	NNT (CI)
Delirium	32%	50%	35% (1.3 to 59)	6 (3 to 209)

†Abbreviations defined in Glossary; RRR, NNT, and CI calculated from data in article.

COMMENTARY

The systematic review by Fick and colleagues examined the prevalence and clinical consequences of delirium superimposed on dementia. A meta-analysis was not feasible because the articles that were retrieved were too heterogeneous in their design and setting. Prevalence rates of delirium ranged from 7% in nursing home patients, to 22% to 25% in community-dwelling patients with dementia, to 32% to 89% in hospitalized patients. Earlier studies showed that delirium is often unrecognized, especially in its "hypoactive" form. Francis and colleagues reported that *underlying dementia*, abnormal sodium levels, illness severity, fever or hypothermia, psychoactive drug use, and azotemia were individually and cumulatively associated with high-risk for delirium among general medicine inpatients. The presence of delirium was correlated with longer hospital stays, death, and institutionalization (1), and in 2 recent prospective studies, delirium was associated with an increased risk for dementia over 2 to 3 years (2, 3).

Fick and colleagues reviewed 2 intervention studies that showed that standardized protocols and recommendations could decrease the rate of new-onset delirium in hospitalized patients > 65 years of age. In the Elder Life Program study (4), patients at *moderate* risk for delirium benefited more than *high*-risk patients from interventions that addressed hearing, vision, ambulation, sleep, cognition, and hydration. The delirium risk scale included baseline cognitive impairment as a risk factor. Subgroup analysis in the second study reviewed by Fick and colleagues (5) found that geriatric consultation was most effective for hip fracture patients *without* underlying dementia. A recent Canadian study (6) found that 58% of elderly medical inpatients with delirium

had underlying dementia. At 8 weeks, almost half the delirious patients improved cognitively as seen by an increase on the Mini-Mental State Examination (> 2 points), but environmental, geriatric, and nursing interventions did not make a difference.

The review by Fick and colleagues highlights the paucity of well-designed studies for this common geriatric problem and outlines important areas for future clinical research.

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