February 2012 Delirium Bibliography

1. Int J Clin Pharm. 2012 Feb 22. [Epub ahead of print]

Pharmacist proactive medication recommendations using electronic documentation in a UK general critical care unit.

Bourne RS, Choo CL.

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Background: Specific data on the actual clinical practice of United Kingdom pharmacists in Critical Care are limited. Within the general critical care units of Sheffield Teaching Hospitals, clinical pharmacists have the facility to electronically document, communicate and follow-up proactive recommendations using a Pharmacy Review Form via the Clinical Information System, MetaVision®.

Objective: The objective of the service evaluation was to describe the acceptance rate by medical staff of pharmacist proactive medication recommendations; including data on the types of recommendations and reasons thereof, for general intensive care patients of a UK teaching hospital trust. Setting Sheffield Teaching Hospitals National Health Service Foundation Trust with 20 intensive care beds located on two hospital sites admitting Level 3 and 2 mixed general medical, surgical, trauma, burns and haematology/oncology patients.

Method: Retrospective analysis of pharmacist proactive recommendations recorded electronically from January 2009 to July 2011 in general intensive care unit patients. Main outcome 5,623 electronic medication recommendations were documented, providing an average of 2.2 proactive recommendations per patient admitted to intensive care from January 2009 to July 2011. 5,101 (90.7%) of the recommendations were accepted and acted upon by medical staff.

Results: The most common recommendations were Add Drug 1,862 (28.2%); Dose Review 1,707 (25.8%); Discontinue Drug 1,185 (17.9%); Alternative Drug 903 (13.7%); Alternative Route 770 (11.7%). The most common reasons for the proactive medication recommendations were related to changes in gastrointestinal absorption 951 (15.6%); compliance with medication guidelines 857 (14.1%); sedation/delirium/agitation management 764 (12.6%); dose adjustment for renal dysfunction or continuous renal replacement therapies 756 (12.4%); and medication reconciliation 612 (10.1%). The majority of medication recommendations involved drugs in Gastrointestinal, Central Nervous System, Cardiovascular, Infection, Nutrition and Blood classes (British National Formulary).

Conclusion: There was a high acceptance rate for proactive medication-related recommendations made by critical care pharmacists via the electronic review form. The majority of pharmacist recommendations were related to adding or refining currently prescribed medication. Ten percent of recommendations related to medication reconciliation of patients' pre-admission medication.

PMID: 22354852 [PubMed - as supplied by publisher]


Recurrent delirium caused by concealed Wolff-Parkinson-White syndrome in a 77 year old woman. [Article in English, Norwegian]
Lillebø ML, Velle HO, Wyller TB.

We describe a 77-year-old woman who was admitted to hospital because no nursing-home bed was available. For some weeks she had suffered from severe nightmares with confusion and hallucinations, and both the family and the social services felt she was in need of permanent nursing-home care. She had serious co-morbidity, mainly due to a cerebral stroke nine years earlier and a myocardial infarction five years earlier. A comprehensive geriatric assessment revealed that the cognitive symptoms had lasted for only a few weeks. She suffered from severe delirium, presumably with no obvious precipitating cause. Further work-up showed that she had had episodes of tachycardia since the age of 35, and a diagnosis of concealed Wolff-Parkinson-White (WPW) syndrome was made. At a younger age, the arrhythmia had given relatively mild symptoms. When she grew older, however, and her myocardium was weakened by an infarction, the episodes of arrhythmia induced congestive heart failure with dyspnea, severe anxiety and delirium. The symptoms of delirium overshadowed the other symptoms, making diagnosis difficult. Various antiarrhythmic drugs were tested. The only drug with a satisfactory effect on the tachycardia was amiodarone, but this drug also induced severe bradycardia. A permanent pacemaker was implanted, and after this the delirium diminished and the patient could be discharged back to her own home. To our knowledge this is the first case to be published of delirium induced by concealed WPW syndrome.

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[The pitfall "dehydration" and hyponatremia]. [Article in German]

Hofmann W.

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Hyponatremia represents a very common disturbance in hospitalized elderly. It correlates with delirium, falls, and intrahospital mortality. Often hyponatremia is ignored or misclassified. The represented algorithm is based on only a few parameters: serum and urine osmolality, and sodium. Treatment of the underlying causes of hyponatremia, e.g., cessation of medications and polypharmacy, is essential. The syndrome of inadequate secretion of antidiuretic hormone (SIADH; hypotonic isovolemic hyponatremia) is also considered.

PMID: 22350394 [PubMed - in process]


Reversible splenial lesion in the corpus callosum following rapid withdrawal of carbamazepine after neurosurgical decompression for trigeminal neuralgia.


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Reversible splenial lesions (RSL) of the corpus callosum have been described in various clinical conditions, and some are attributed to the action of antiepileptic drugs (AED). Abrupt withdrawal of an AED in preparation for surgical treatment can result in RSL of the corpus callosum in patients with trigeminal neuralgia who do not have epilepsy. We report two patients who developed RSL following surgical treatment of trigeminal neuralgia. Since our two patients did not have epilepsy, it is strongly suggested that the AED, rather than convulsive status epilepticus, could be a contributing factor in RSL. The pathogenesis of AED-associated RSL is not clear. Similar RSL can appear under various circumstances, implying that factors other than AED can influence a common end-point mechanism that results in RSL. Nevertheless, delirium after surgery may be a cue for inquiring about RSL. This condition is transient and represents a clinicoradiological syndrome with an excellent prognosis. We should consider this phenomenon in the perioperative period after surgery for trigeminal neuralgia to avoid invasive diagnostic and therapeutic procedures.

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A case of mistaken identity: alcohol withdrawal, schizophrenia, or central pontine myelinolysis?

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Demyelination is a hallmark of central pontine myelinolysis (CPM). Neuropsychiatric manifestations of this condition include weakness, quadriplegia, pseudobulbar palsy, mood changes, psychosis, and cognitive disturbances. These psychiatric symptoms are also associated with schizophrenia and alcohol withdrawal. Thus, it is clinically relevant to differentiate between CPM, schizophrenia, and alcohol withdrawal as the treatment and prognostic outcomes for each diagnosis are distinct. We present a series of events that led to a misdiagnosis of a patient admitted to the medical emergency center presenting with confusion, psychomotor agitation, and delirium who was first diagnosed with schizophrenia and alcohol withdrawal by emergency medical physicians and later discovered by the psychiatric consult team to have CPM. With a thorough psychiatric evaluation, a review of the laboratory results first showing mild hyponatremia (127 mmol/L), subsequent hypernatremia (154 mmol/L), and magnetic resonance brain imaging, psychiatrists concluded that CPM was the primary diagnosis underlying the observed neuropsychopathology. This patient has mild impairments in mood, cognition, and motor skills that remain 12 months after her emergency-center admission. This case report reminds emergency clinicians that abnormal sodium metabolism can have long-term and devastating psychopathological and neurological consequences. Differentiating between CPM, schizophrenia, and alcohol withdrawal using neuroimaging techniques and preventing the risks for CPM using slow sodium correction are paramount.

PMCID: PMC3280106
PMID: 22347796  [PubMed - in process]

Obstructive Sleep Apnea Predicts Adverse Perioperative Outcome: Evidence for an Association between Obstructive Sleep Apnea and Delirium.

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PMID: 22337163  [PubMed - as supplied by publisher]


Obstructive Sleep Apnea and Incidence of Postoperative Delirium after Elective Knee Replacement in the Nondemented Elderly.

Flink BJ, Rivelli SK, Cox EA, White WD, Falcone G, Vail TP, Young CC, Bolognesi MP, Krystal AD, Trzepacz PT, Moon RE, Kwatra MM.

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BACKGROUND: Postoperative delirium, a common complication in the elderly, can occur following any type of surgery and is associated with increased morbidity and mortality; it may also be associated with subsequent cognitive problems. Effective therapy for postoperative delirium remains elusive because the causative factors of delirium are likely multiple and varied.

METHODS: Patients 65 yr or older undergoing elective knee arthroplasty were prospectively evaluated for postoperative Diagnostic and Statistical Manual of Mental Disorders-IV delirium. Exclusion criteria included dementia, mini-mental state exam score less than 24, delirium, clinically significant central nervous system/neurologic disorder, current alcoholism, or any serious psychiatric disorder. Delirium was assessed on postoperative days 2 and 3 using standardized scales. Patients' preexisting medical conditions were obtained from medical charts. The occurrence of obstructive sleep apnea was confirmed by contacting patients to check their polysomnography records. Data were analyzed using Pearson chi-square or Wilcoxon rank sum tests and multiple logistic regressions adjusted for effects of covariates.

RESULTS: Of 106 enrolled patients, 27 (25%) developed postoperative delirium. Of the 15 patients with obstructive sleep apnea, eight (53%) experienced postoperative delirium, compared with 19 (20%) of the patients without obstructive sleep apnea (P = 0.0123, odds ratio: 4.3). Obstructive sleep apnea was the only statistically significant predictor of postoperative delirium in multivariate analyses.
CONCLUSIONS: This is the first prospective study employing validated measures of delirium to identify an association between preexisting obstructive sleep apnea and postoperative delirium.

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HIV-associated neurocognitive disorders (HAND) in a South Asian population - contextual application of the 2007 criteria.

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OBJECTIVES: To estimate the prevalence of HIV-associated neurocognitive disorders (HAND) among HIV patients in a multiethnic South Asian population, describe the pattern of neurocognitive impairment in HAND and the factors associated with HAND.

DESIGN: A cross-sectional survey of HIV-positive outpatients and inpatients.


PARTICIPANTS: Inclusion criteria were HIV positive, age between 21 and 80 years old and at least 3 years of education. Exclusion criteria included concomitant delirium, serious systemic disease or major psychiatric illness. 265 patients did not meet criteria or declined to participate. The final sample size was 132.

OUTCOME MEASURES: The primary outcome measure was cognitive impairment based on performance on the Montreal Cognitive Assessment, International HIV Dementia Scale and Instrumental Activities of Daily Living. The secondary outcome measure was the classification of impairment based on the 2007 updated research nosology for HAND.

RESULTS: The prevalence of HAND was 22.7% of which 70% (15.9% of total) were asymptomatic neurocognitive impairment, 23.3% (5.3% of total) were mild neurocognitive disorder and 6.7% (1.5% of total) were HIV-associated dementia. Increasing age (OR 1.104, 95% CI 1.054 to 1.155, p<0.001), less education (OR 0.78, 95% CI 0.69 to 0.89, p<0.001) and low baseline CD4 count (OR 0.15, 95% CI 0.03 to 0.74, p=0.019) were associated with HAND. Delayed recall, language and abstract thinking were the domains most commonly affected, but impairment in visuospatial ability (RC 3.013, 95% CI 1.954 to 4.073, p<0.001) and attention (RC 2.205, 95% CI 1.043 to 3.367, p<0.001) were most strongly associated with HAND.

CONCLUSION: HAND is common among HIV patients in a South Asian sample, most of whom are asymptomatic. Older patients with less education and severe illness at diagnosis are at highest risk of HAND. Delayed recall is most commonly affected, but visuospatial dysfunction is most strongly associated with prevalent HAND.

PMCID: PMC3282293
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Last three days of life in the hospital: a comparison of symptoms, signs and treatments in the young old and the oldest old patients using the Resident Assessment Instrument for Palliative Care.
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steindal s.a., ranhoff a.h., bredal i.s., sørbye l.w. & lerdal a. (2012)

Last three days of life in the hospital: a comparison of symptoms, signs and treatments in the
young old and the oldest old patients using the Resident Assessment Instrument for Palliative
Background: Knowledge concerning the provision of end of life care to the oldest old
hospitalised patients is deficient.
Aims and Objectives: To analyse whether there were differences in registered nurses'
documentation of the young old vs. the oldest old patients according to symptoms, clinical signs
and treatment in the last 3 days of life.
Design: Data were collected retrospectively in a cross-sectional comparative study at a hospital
between autumn 2007 and spring 2009.
Methods: The study included 190 patients: 101 (65-84 years) and 89 (85+). Data were
extracted from the patients' electronic records using the Resident Assessment Instrument for
Palliative Care (RAI-PC).
Results: Falls (OR = 4.01, 95% CI 1.47-10.90) and peripheral oedema (OR = 2.74, 95% CI
1.06-7.11) were significantly more frequent documented in the oldest old patients compared with
the young old patients. Delirium was recorded in 15.3% of all patients.
Conclusion: With the exception of more falls and peripheral oedema in the oldest old patients,
this study showed no differences in symptoms and treatment between the young old and the
oldest old patients. Delirium was poorly documented compared to other studies. Implications
for practice. The oldest old patients have a higher risk of falls in the final phase of life, and fall
prevention should be considered.

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Acute Delirium and Poor Compliance in Total Hip Arthroplasty Patients With Substance Abuse
Disorders.

Yu YH, Chen AC, Hu CC, Hsieh PH, Ueng SW, Lee MS.

From the joint registry of 2831 primary total hip arthroplasties (2351 patients) performed
between 1998 and 2003, we identified 15 patients (16 hips) who had a documented history of
substance abuse disorders at the time of the index surgery. The patients included 13 men (14
hips) and 2 women (2 hips), with the mean age of 49 years (range, 29-65 years). On the basis of
the criteria specified in the Diagnostic and Statistical Manual of Mental Disorders, Fourth
Edition, 13 patients had alcohol abuse disorders, 1 had amphetamine abuse disorder, and 1 had heroin abuse disorder. We found high rates of postoperative substance withdrawal delirium and psychosis (46%), late complication (25%), and lost to follow-up (27%) in these patients. Because patients with substance abuse disorders have unexpected perioperative psychotic episodes, poor compliance, and a tendency to not follow medical advice after surgery and show early discontinuation of follow-up, we suggest that surgeons should work with other medical professionals and carefully perform total hip arthroplasty in such patients.

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Development and validation of PRE-DELIRIC (PREdiction of DELIRium in ICu patients) delirium prediction model for intensive care patients: observational multicentre study.


Department of Intensive Care Medicine, Radboud University Nijmegen Medical Centre, 6500HB Nijmegen, Netherlands.

OBJECTIVES: To develop and validate a delirium prediction model for adult intensive care patients and determine its additional value compared with prediction by caregivers.

DESIGN: Observational multicentre study.

SETTING: Five intensive care units in the Netherlands (two university hospitals and three university affiliated teaching hospitals).

PARTICIPANTS: 3056 intensive care patients aged 18 years or over.

MAIN OUTCOME MEASURE: Development of delirium (defined as at least one positive delirium screening) during patients' stay in intensive care.

RESULTS: The model was developed using 1613 consecutive intensive care patients in one hospital and temporally validated using 549 patients from the same hospital. For external validation, data were collected from 894 patients in four other hospitals. The prediction (PRE-DELIRIC) model contains 10 risk factors-age, APACHE-II score, admission group, coma, infection, metabolic acidosis, use of sedatives and morphine, urea concentration, and urgent admission. The model had an area under the receiver operating characteristics curve of 0.87 (95% confidence interval 0.85 to 0.89) and 0.86 after bootstrapping. Temporal validation and external validation resulted in areas under the curve of 0.89 (0.86 to 0.92) and 0.84 (0.82 to 0.87). The pooled area under the receiver operating characteristics curve (n=3056) was 0.85 (0.84 to 0.87). The area under the curve for nurses' and physicians' predictions (n=124) was significantly lower at 0.59 (0.49 to 0.70) for both.

CONCLUSION: The PRE-DELIRIC model for intensive care patients consists of 10 risk factors that are readily available within 24 hours after intensive care admission and has a high predictive value. Clinical prediction by nurses and physicians performed significantly worse. The model allows for early prediction of delirium and initiation of preventive measures. Trial registration Clinical trials NCT00604773 (development study) and NCT00961389 (validation study).

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PMID: 22323509 [PubMed - in process]

Delirium in intensive care patients.

Page V.

Watford General Hospital, Watford WD18 0HB, UK.

PMID: 22323508  [PubMed - in process]


Undetected Cognitive Impairment and Decision-Making Capacity in Patients Receiving Hospice Care.

Burton CZ, Twamley EW, Lee LC, Palmer BW, Jeste DV, Dunn LB, Irwin SA.

From the SDSU/UCSD Joint Doctoral Program in Clinical Psychology (CZB); UCSD Department of Psychiatry (EWT, BWP, DVJ, SAI); Center for Excellence in Stress and Mental Health, VA San Diego Healthcare System (EWT); Southern California Permanente Medical Group (LCL); UCSF Department of Psychiatry (LBD); UCSF Helen Diller Comprehensive Cancer Center (LBD); The Institute for Palliative Medicine at San Diego Hospice (SAI).

OBJECTIVE: Cognitive dysfunction is common in patients with advanced, life-threatening illness and can be attributed to a variety of factors (e.g., advanced age, opiate medication). Such dysfunction likely affects decisional capacity, which is a crucial consideration as the end-of-life approaches and patients face multiple choices regarding treatment, family, and estate planning. This study examined the prevalence of cognitive impairment and its impact on decision-making abilities among hospice patients with neither a chart diagnosis of a cognitive disorder nor clinically apparent cognitive impairment (e.g., delirium, unresponsiveness).

DESIGN: A total of 110 participants receiving hospice services completed a 1-hour neuropsychological battery, a measure of decisional capacity, and accompanying interviews.

RESULTS: In general, participants were mildly impaired on measures of verbal learning, verbal memory, and verbal fluency; 54% of the sample was classified as having significant, previously undetected cognitive impairment. These individuals performed significantly worse than the other participants on all neuropsychological and decisional capacity measures, with effect sizes ranging from medium to very large (0.43-2.70). A number of verbal abilities as well as global cognitive functioning significantly predicted decision-making capacity.

CONCLUSION: Despite an absence of documented or clinically obvious impairment, more than half of the sample had significant cognitive impairments. Assessment of cognition in hospice patients is warranted, including assessment of verbal abilities that may interfere with understanding or reasoning related to treatment decisions. Identification of patients at risk for impaired cognition and decision making may lead to effective interventions to improve decision making and honor the wishes of patients and families.

ICU delirium: an update.

Jones SF, Pisani MA.
PURPOSE OF REVIEW: Delirium is frequently encountered in the ICU and is associated with significant adverse outcomes. The increasingly recognized consequences of ICU delirium should enhance efforts to improve recognition and management of this serious problem. We aim to review the recent literature on ICU delirium, including risk factors, detection, management and long-term impact of disease.

RECENT FINDINGS: We present the most recent evidence on risk factors for ICU delirium and its persistence. In addition, we aim to clarify some of the confusion surrounding the tools for detection and their limitation in practice. The literature reflects long-term neurocognitive impairments following ICU delirium and supports efforts to reduce these negative outcomes using protocol-driven sedation and ventilator management. Although haloperidol is widely accepted as the preferred pharmacologic treatment for delirium, its use is not seeded in robust evidence. Limited studies reflect the safety of atypical antipsychotics for treatment but lack clear improvement in delirium-related outcomes. We place an emphasis on the use of protocols to reduce the use of sedatives, particularly benzodiazepines in the management of ICU delirium.

SUMMARY: Delirium remains an underrecognized and underdiagnosed problem. Detection tools are readily available and easy to use. Further understanding of risk factors is needed to identify most susceptible individuals and plan management, which should include prevention and therapy based on available evidence.

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High Preoperative Plasma Neopterin Predicts Delirium After Cardiac Surgery in Older Adults.

Osse RJ, Fekkes D, Tulen JH, Wierdsma AI, Bogers AJ, van der Mast RC, Hengeveld MW.

Psychiatry.

OBJECTIVES: To examine the association between plasma levels of pterins and amino acids and postoperative delirium. DESIGN: Prospective cohort study. SETTING: Cardiothoracic service in an university hospital in Rotterdam, the Netherlands. PARTICIPANTS: One hundred twenty-five individuals aged 70 and older undergoing elective cardiac surgery. MEASUREMENTS: Plasma pterins and amino acids were measured pre- and postoperatively. Using multiple logistic regression analyses, the associations between pterins and amino acid levels and postoperative delirium were examined in relation to age, sex, comorbidity, cognitive functioning (Mini-Mental State Examination (MMSE) score), and cardiac risk factors. RESULTS: Delirium incidence in the main study group was 31.3%. The preoperative measures associated with delirium were neopterin (odds ratio (OR) = 1.05, P = .009); MMSE score less than 28 (OR = 4.39, P = .001); European System for Cardiac Operative Risk Evaluation score greater than 6 (OR = 2.84, P = .03); and combined coronary artery bypass graft (CABG) and aortic, mitral, or tricuspid valve surgery (OR = 4.32, P = .01). Postoperative measures associated with delirium were neopterin (OR = 3.84, P = .02), homovanillic acid (HVA, OR = 1.01, P = .04), and preoperative MMSE score less than 28 (OR = 3.32, P = .008). CONCLUSION: Preoperatively high neopterin levels predicted delirium after cardiac surgery in older adults.
older adults, in addition to the well-known risk factors of poor cognitive function, high cardio-
surgical risk, and combined CABG and valve surgery. Postoperative neopterin and HVA levels
were also found to be associated with delirium, together with preoperative cognitive functioning.
Plasma neopterin may be a candidate biomarker for delirium after cardiac surgery in these older
adults.

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print]

The Cholinergic System and Inflammation: Common Pathways in Delirium Pathophysiology.


Department of Psychiatry, Hospitais da Universidade de Coimbra; Faculty of Medicine,
Universidade de Coimbra, Coimbra, Portugal.

OBJECTIVES: To investigate whether delirium is associated with an unbalanced inflammatory
response or a dysfunctional interaction between the cholinergic and immune systems.

DESIGN: Cohort observational study.

SETTING: General hospital orthopedic ward.

PARTICIPANTS: One hundred one individuals aged 60 and older with no previous cognitive
impairment undergoing elective arthroplasty.

MEASUREMENTS: Incidence of postoperative delirium, plasma cholinesterase activity
(acetylcholinesterase (AChE) and butyrylcholinesterase (BuChE)) and inflammatory
mediators (C-reactive protein (CRP), interleukin (IL)-1 beta, tumor necrosis factor alpha, IL-6,
IL-8, IL-10) before and after surgery.

RESULTS: Thirty-seven participants developed postoperative delirium and had greater
production of CRP and proinflammatory to anti-inflammatory ratio after surgery. In participants
with delirium, but not in controls, preoperative levels of plasma cholinesterase activity correlated
with ∆CRP (AChE: ρ = 0.428, P = .008 and BuChE: ρ = 0.423, P = .009), ∆IL-6 (AChE: ρ =
0.339, P = .04), and ∆P/A ratio (AChE: ρ = 0.346, P = .04).

CONCLUSION: Delirium was associated not only with an unbalanced inflammatory response,
but also with a dysfunctional interaction between the cholinergic and immune systems.
Comprehensive understanding of the relationship between the cholinergic and immune systems
is crucial to developing new insights into delirium pathophysiology and novel therapeutic
interventions.

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Postoperative delirium: risk factors and management: Continuing Professional Development.

Chaput AJ, Bryson GL.
PURPOSE: Postoperative delirium often remains undiagnosed and therefore untreated. The purpose of this continuing professional development module is to identify patients at high risk of developing delirium following non-cardiac surgery and to provide tools to aid in the diagnosis of delirium at the bedside. Optimal prevention and treatment strategies are recommended.

PRINCIPAL FINDINGS: Delirium is characterized by an acute onset and a fluctuating course, inattention, disorganized thinking and an altered level of consciousness, and occurs in up to 40% of patients in the perioperative period. The pathophysiology of delirium is multifactorial, but it is believed to be related to inflammation, altered neurotransmission, and stress in the patient who has had surgery. Acetylcholine and dopamine appear to play a significant role. There is an increased risk of a poor outcome in patients who develop delirium, including a longer hospital stay and death. Surgical and patient factors play a significant role in predicting who will subsequently develop delirium. Prevention is much more effective than treatment in the management of delirium. The most effective prevention strategies include proactive geriatric assessment and care of the patient on a geriatrics surgical ward as well as prophylactic low-dose antipsychotic agents. From an anesthetic perspective, evidence in some surgical populations would support the use of regional techniques and minimal sedation. If delirium develops, treatment with low-dose oral antipsychotics appears to be most effective.

CONCLUSIONS: Delirium is a serious condition that must be recognized early and treated promptly to minimize deleterious outcomes. In order to institute prevention strategies and treat the condition effectively when it occurs, the anesthesiologist must be vigilant in identifying patients at risk and in screening for this condition.

PMID: 22311257  [PubMed - as supplied by publisher]


Memory loss.

Flicker LA, Ford AH, Beer CD, Almeida OP.

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Most older people with memory loss do not have dementia. Those with mild cognitive impairment are at increased risk of progressing to dementia, but no tests have been shown to enhance the accuracy of assessing this risk. Although no intervention has been convincingly shown to prevent dementia, data from cohort studies and randomised controlled trials are compelling in indicating that physical activity and treatment of hypertension decrease the risk of dementia. There is no evidence that pharmaceutical treatment will benefit people with mild cognitive impairment. In people with Alzheimer's disease, treatment with a cholinesterase inhibitor or memantine (an N-methyl-D-aspartate receptor antagonist) may provide symptomatic relief and enhance quality of life, but does not appear to alter progression of the illness. Non-pharmacological strategies are recommended as first-line treatments for behavioural and psychological symptoms of dementia, which are common in Alzheimer's disease. Atypical antipsychotics have modest benefit in reducing agitation and psychotic symptoms but increase the risk of cardiovascular events. The role of antidepressants in managing depressive symptoms
in patients with mild cognitive impairment is uncertain and may increase the risk of delirium and falls.

PMID: 22304604  [PubMed - in process]


Apolipoprotein E e4 allele does not increase the risk of early postoperative delirium after major surgery.


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BACKGROUND: A relationship between patients with a genetic predisposition to and those who develop postoperative delirium has not been yet determined. The aim of this study was to determine whether there is an association between apolipoprotein E epsilon 4 allele (APOE4) and delirium after major surgery.

METHODS: Of 230 intensive care patients admitted to the post anesthesia care unit (PACU) over a period of 3 months, 173 were enrolled in the study. Patients' demographics and intra- and postoperative data were collected. Patients were followed for the development of delirium using the Intensive Care Delirium Screening Checklist, and DNA was obtained at PACU admission to determine apolipoprotein E genotype.

RESULTS: Fifteen percent of patients developed delirium after surgery. Twenty-four patients had one copy of APOE4. The presence of APOE4 was not associated with an increased risk of early postoperative delirium (4% vs. 17%; P = 0.088). The presence of APOE4 was not associated with differences in any studied variables. Multivariate analysis identified age [odds ratio (OR) 9.3, 95% confidence interval (CI) 2.0-43.0, P = 0.004 for age ≥65 years], congestive heart disease (OR 6.2, 95% CI 2.0-19.3, P = 0.002), and emergency surgery (OR 59.7, 95% CI 6.7-530.5, P < 0.001) as independent predictors for development of delirium. The Simplified Acute Physiology Score II (SAPS II) and The Acute Physiology and Chronic Health Evaluation II (APACHE II) were significantly higher in patients with delirium (P < 0.001 and 0.008, respectively). Hospital mortality rates of these patients was higher and they had a longer median PACU stay.

CONCLUSIONS: Apolipoprotein e4 carrier status was not associated with an increased risk for early postoperative delirium. Age, congestive heart failure, and emergency surgery were independent risk factors for the development of delirium after major surgery.

PMID: 22302107  [PubMed - as supplied by publisher]


The relation between atherosclerosis and the occurrence of post-operative delirium in vascular surgery patients.

Pol RA, van Leeuwen BL, Reijnen MM, Zeebregts CJ.

Department of Surgery (Division of Vascular Surgery), University Medical Center Groningen, University of Groningen, Groningen, The Netherlands.
Old and frail patients undergoing vascular surgery seem at great risk of developing postoperative delirium (POD). The aim of this review was to identify risk factors for the development of POD in vascular surgery patients. Different aetiological factors have been identified, such as increased age, excessive blood transfusion, preoperative cognitive impairment and depression. Mounting evidence supports a role for inflammation and tobacco exposure in the development of POD. Vascular surgery patients differ from the general surgical population because they suffer from both loco-regional and systemic atherosclerosis. Although current scientific evidence cannot fully link both entities, evidence is growing that suggests a relationship between systemic and cerebrovascular atherosclerosis and the development of POD.

PMID: 22302037  [PubMed - as supplied by publisher]


Using the Mini-Mental State Examination to Screen for Delirium in Elderly Patients with Hip Fracture.

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Background: The main aim of this paper was to examine the usefulness of the Mini-Mental State Examination (MMSE) for screening delirium in elderly patients with hip fracture. Methods: The sample included 364 elderly patients with hip fracture admitted to two hospitals in Oslo. Delirium was assessed by the Confusion Assessment Method (CAM) as an approximation of the gold standard, DSM-IV. To evaluate the psychometric properties of the MMSE scale, we used the Mokken nonparametric latent trait model for unidimensional scaling. Results: In total, 76 (21%) patients were diagnosed with delirium based on the CAM, and 141 (43%) had preexisting cognitive impairment. As a screening tool, the recommended MMSE cut-point of 24 showed an acceptable sensitivity of 88% with a specificity of 54%. The prediction of delirium, based on logistic regression on the MMSE total score and on the 5 items selected by the stepwise logistic regression procedure, gave clearly less acceptable results. Conclusions: Our study indicates that the MMSE may be useful in screening for delirium, but the high percentage of false positives shows that it does not have diagnostic potential in patients with hip fracture.

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Low social support is associated with an increased risk of postoperative delirium.

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STUDY OBJECTIVE: To examine the predictive value of social support in postoperative delirium.

DESIGN: Prospective observational study.

SETTING: Postoperative recovery room and orthopedic surgery department.

PATIENTS: 106 consecutive patients undergoing a planned orthopedic surgery with general anesthesia.

MEASUREMENTS: All patients completed questionnaires to assess depressive mood (the Beck Depression Inventory) and social support (Sarason's Social Support Questionnaire) during the preanesthesia visit. Postoperative delirium symptoms were assessed daily using the Memorial Delirium Assessment Scale. Demographic, clinical, and biological data, including anesthesia procedure, were recorded.

MAIN RESULTS: Controlling for various potential confounders through multivariate binary logistic regression, postoperative delirium was independently predicted by satisfaction with social support, but neither by depressive mood nor the number of supportive persons. Other significant predictors were the preoperative use of benzodiazepines, age, and type of surgery.

CONCLUSION: Patients who report low satisfaction with social support may present with a particular vulnerability to postoperative delirium, even after controlling for physical confounding variables and depressive mood.

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Delirium assessment and management. [No authors listed]

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Psychiatric symptoms in a patient with churg-strauss syndrome.

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We report a case of Churg-Strauss syndrome (CSS) in a patient with multiple cerebral infarctions and psychotic symptoms. A 67-year-old man presented a high-grade fever and delirium. He was clinically diagnosed with Churg-Strauss syndrome on the basis of the presence of asthma, europathy, blood eosinophilia, and increased myeloperoxidase-specific anti-neutrophil cytoplasmic antibody (MPO-ANCA) activities. Though multiple cerebral infarctions are irreversible, this patient's psychiatric symptoms improved with steroid treatment. Psychiatric symptoms associated with CSS are very rare.

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Development and treatment of delirium in critically ill children - a systematic review. [Article in Danish]
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Delirium is a common and often under-recognised neuropsychiatric disorder in paediatric critical care, secondary to a general medical condition. Paediatric delirium (PD) is associated with high morbidity and mortality and prolonged stay at the intensive care unit. This review introduces the reader to PD and focuses on diagnostic tools, prognosis and treatment. The literature about PD is sparse. In order to make recommendations about PD based on evidence more clinical studies are urgently needed.

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Objective: Delirium is a highly prevalent and deleterious disorder in terminally ill cancer patients. We assessed whether a multicomponent preventive intervention was effective in decreasing delirium incidence and severity among cancer patients receiving end-of-life care. Methods: A cohort of 1516 patients was followed from admission to death at seven Canadian palliative care centers. In two of these centers, routine care included a delirium preventive intervention targeting physicians (written notice on selective delirium risk factors and inquest on intended medication changes), patients, and their family (orientation to time and place, information about early delirium symptoms). Delirium frequency and severity were compared between patients at the intervention (N = 674) and usual-care (N = 842) centers based on thrice-daily symptom assessments with the Confusion Rating Scale. Results: The overall rate of adherence to the intervention was 89.7%. The incidence of delirium was 49.1% in the intervention group, compared with 43.9% in the usual-care group (odds ratio [OR] 1.23, P = 0.045). When confounding variables were controlled for, no difference was observed between the intervention and the usual-care groups in delirium incidence (OR 0.94, P = 0.66), delirium severity (1.83 vs 1.92; P = 0.07), total days in delirium (4.57 vs 3.57 days; P = 0.63), or duration of first delirium episode (2.9 vs 2.1 days; P = 0.96). Delirium-free survival was similar in the two groups.
Conclusion: A simple multicomponent preventive intervention was ineffective in reducing delirium incidence or severity among cancer patients receiving end-of-life care. Delirium prevention remains a difficult challenge in terminally ill cancer patients.

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Delirium in patients with stroke: the dark side of the moon?

Skrobik Y.


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Acute postoperative confusional syndrome in the elderly patient. [Article in English, Spanish]

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With the progressive aging of the population surgical candidates have more comorbidities resulting in a higher risk to develop postoperative complications. One of the most frequent postoperative complications in the elderly is acute confusional state or delirium, which may have devastating consequences: higher mortality, and risk of medical complications during admission and, a higher risk of functional decline, institutionalization, and cognitive impairment at discharge. For all these reasons and with the aim of optimising surgical procedures, it is essential to identify patients at risk of delirium in order to take appropriate preventive action and provide early treatment. In the present article we review the current evidence on the management of postoperative delirium in the elderly.

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Agitated delirium associated with therapeutic doses of sustained-release bupropion.

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CASE DESCRIPTION: We report a case of a patient initiated on therapeutic doses of sustained-release bupropion for the management of major depressive disorder who subsequently developed acute agitated delirium that required ICU level care. This patient's history was significant for alcohol and cannabis abuse but he was currently detoxified and beyond the withdrawal period. Throughout the course of treatment, all maintenance medications, including bupropion, were discontinued and the patient required escalating doses of benzodiazepines and typical antipsychotics to resolve symptoms. The patient's delirium subsided after approximately 5 days.

CONCLUSION: Dopamine is thought to play a role in the pathophysiology of delirium and given the mechanism of action of this drug and the presence of delirium risk factors in our patient, we are faced with a likely causative factor of this acute delirious episode.

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Haloperidol dosing strategies in the treatment of delirium in the critically-ill.

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Delirium is the most common mental disturbance in critically-ill patients and results in significant morbidity and mortality. Haloperidol is a preferred agent for the treatment of delirium in this population because of its rapid onset of action and lack of hemodynamic effects. Despite its widespread use in the critical care setting, most of the relevant data are obtained from case series or extrapolated from non-critically-ill populations. This review provides an overview of haloperidol pharmacokinetics and a comprehensive summary of the evidence for various haloperidol dosing regimens in the treatment of delirium in critically-ill patients. A comprehensive literature search was conducted in Medline, Embase, and International Pharmaceutical Abstracts with "haloperidol", "delirium", "agitation", "critically-ill", and "intensive care" as keywords. Studies involving haloperidol for delirium prophylaxis, non-critical care settings, and terminally-ill subjects were excluded. Eleven studies were identified: four with intermittent IV haloperidol, four with continuous IV infusion haloperidol, two with oral/enteral haloperidol, and one with IM haloperidol. All of the case reports, case series, and descriptive studies have shown a benefit with haloperidol, but publication bias is likely present. Only three studies were controlled studies, but all had small sample sizes and methodological flaws. Randomized, double-blind, active-comparator trials of haloperidol with allocation concealment are needed. Subsequent research should focus on using validated delirium screening and assessment scales for more objective identification and measurement of delirium outcomes.

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OBJECTIVE: To describe the epidemiology and time spectrum of delirium using Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition criteria and to validate a tool for delirium assessment in patients in the acute poststroke period.  
DESIGN: A prospective observational cohort study.  
SETTING: The stroke unit of a university hospital.  
PATIENTS: A consecutive series of 129 patients with stroke (with infarction or intracerebral hemorrhage, 57 women and 72 men; mean age, 72.5 yrs; age range, 35-93 yrs) admitted to the stroke unit of a university hospital were evaluated for delirium incidence.  
INTERVENTIONS: None.  
MEASUREMENTS AND MAIN RESULTS: Criterion validity and overall accuracy of the Czech version of the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) were determined using serial daily delirium assessments with CAM-ICU by a junior physician compared with delirium diagnosis by delirium experts using the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition criteria that began the first day after stroke onset and continued for at least 7 days. Cox regression models using time-dependent covariate analysis adjusting for age, gender, prestroke dementia, National Institutes of Stroke Health Care at admission, first-day Sequential Organ Failure Assessment, and asphasia were used to understand the relationships between delirium and clinical outcomes. An episode of delirium based on reference Diagnostic and Statistical Manual assessment was detected in 55 patients with stroke (42.6%). In 37 of these (67.3%), delirium began within the first day and in all of them within 5 days of stroke onset. A total of 1003 paired CAM-ICU/Diagnostic and Statistical Manual of Mental Disorders daily assessments were completed. Compared with the reference standard for diagnosing delirium, the CAM-ICU demonstrated a sensitivity of 76% (95% confidence interval [CI] 55% to 91%), a specificity of 98% (95% CI 93% to 100%), an overall accuracy of 94% (95% CI 88% to 97%), and high interrater reliability (κ = 0.94; 95% CI 0.83-1.0). The likelihood ratio of the CAM-ICU in the diagnosis of delirium was 47 (95% CI 27-83). Delirium was an independent predictor of increased length of hospital stay (hazard ratio 1.63; 95% CI 1.11-2.38; p = .013).  
CONCLUSIONS: Poststroke delirium may frequently be detected provided that the testing algorithm is appropriate to the time profile of poststroke delirium. Early (first day after stroke onset) and serial screening for delirium is recommended. CAM-ICU is a valid instrument for the diagnosis of delirium and should be considered an aid in delirium screening and assessment in future epidemiologic and interventional studies in patients with stroke.  

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Delirium in the elder patient: update in prevention, diagnosis and treatment. [Article in Spanish]  
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