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ORIGINAL ARTICLE

Diagnosing delirium in very elderly intensive care patients

Natalie R. Heriot[a], Michele R. Levinson[a,b], Amber C. Mills[a,*], Thinn Thinn Khine[c], Anthea L. Gellie[a], Gaya Sritharan[a]

[a] *Cabrini Institute, Cabrini-Monash Department of Medicine, Cabrini Hospital, Malvern, VIC, Australia*
[b] *Monash University, VIC, Australia*
[c] *Cabrini Health, VIC, Australia*

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Delirium;
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Intensive care units;
Aged, 80 and over;
International classification of diseases;
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Summary
Objective: To determine the incidence of delirium in elderly intensive care patients and to compare incidence using two retrospective chart-based diagnostic methods and a hospital reporting measure (ICD-10).
Design: Retrospective study.
Setting: An ICU in a large metropolitan private hospital in Melbourne, Australia.
Patients: English-speaking participants ($n = 348$) 80+ years, admitted to ICU for >24 hours.
Measurements and main results: Medical files of ICU patients admitted October 2009–October 2012 were retrospectively assessed for delirium using the Inouye chart review method, DSM-IV diagnostic criteria and ICD-10 coding data. General patient characteristics, first onset of delirium symptoms, source of delirium information, administration of delirium medication, hospital and ICU length of stay, 90 day mortality were documented. Delirium was found in 11–29% of patients, the highest incidence identified by chart review. Patients diagnosed with delirium had higher 90 day mortality, and those meeting criteria for all three methods had longer hospital and ICU length of stay.
Conclusions: ICU delirium in the elderly is often under-reported and strategies are needed to improve staff education and diagnosis.

* Corresponding author at: 183 Wattletree Road, Malvern, VIC 3144, Australia. Tel.: +61 395083464.
E-mail address: AMills@Cabrini.com.au (A.C. Mills).

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Implications for clinical practice

- Delirium is often under-reported, especially the hypoactive subtype and this has implications for hospital and ICU length of stay and mortality in older patients
- Prevalence of delirium can vary greatly depending on method of diagnosis.
- Nursing staff are often the first to document delirium symptoms and this is particularly important given the fluctuating nature of delirium.
- Training and education strategies are necessary, especially for nursing staff, to improve diagnosis of delirium.

Introduction

Delirium is an acute, fluctuating and multifactorial confusional state characterised by a disturbance of consciousness presenting as reduced clarity of awareness, inattention and global cognitive dysfunction, manifesting as memory impairment, disorientation, and disturbance in language and perception (American Psychiatric Association, 2000; Hshieh et al., 2015). Whilst the delirium syndrome has long been recognised, there has been a relatively recent shift in approach from an unavoidable, benign, self-limiting consequence of time spent in the intensive care unit (ICU), to a somewhat preventable medical emergency akin to organ failure, with the potential for significant and lasting side effects (Balas et al., 2009; Marino et al., 2015; Ouimet et al., 2007; Pandharipande et al., 2008).

Delirium is one of six leading causes of preventable injury in persons aged ≥65 years (Girard et al., 2008; Pisani et al., 2007) and one of the most common complications in the hospitalised elderly (Witlox et al., 2010). Reported prevalence rates are as high as 87% in elderly critically ill patients (Ely et al., 2001a; Wells, 2012) and 70% in post-operative cardiac patients (McPherson et al., 2013). Delirium is frequently under-diagnosed and often undocumented (Inouye, 1998; Pisani et al., 2006; Siddiqi et al., 2006). Multiple comorbidities common in elderly patients may impede the recognition and attribution of symptoms to delirium (Traynor et al., 2015). The different subtypes of delirium (hyperactive, hypoactive and mixed) can affect the ease with which delirium is recognised. Whilst hyperactive delirium presents in an acutely psychotic manner with patients exhibiting restlessness, agitation, hallucinations and delusions, the hypoactive subtype is characterised by subtle signs that mimic depressive mood disorders, with patients demonstrating inattentiveness, a flat-affect, lethargy, slow response to questioning and little spontaneous movement (Chen and Lim, 2015; Fong et al., 2009). It is widely accepted that difficulties in diagnosing the hypoactive subtype contribute to the underreporting of delirium (Peritogiannis et al., 2015). Older age (≥65 years) has been reported as strongly and independently associated with hypoactive delirium (Peterson et al., 2006).

Delirium in older adults is associated with increased healthcare costs, risk of falls and pressure sores, functional decline, prolonged hospitalisation and ICU stay, increased morbidity and mortality, increased rates of post-discharge institutionalisation, re-admission, dementia, general distress, post-traumatic stress disorder, and long-term cognitive impairment (Chen and Lim, 2015; Goldberg et al., 2015; Jackson et al., 2015; Leslie et al., 2008). Whilst recovery can be rapid, complete resolution of delirium may take up to 12 months (McCusker et al., 2003). Hypoactive delirium has been associated with a worse prognosis than hyperactive subtype in non-ICU patients although this comparison has not been studied extensively in ICU patients (Girard et al., 2008; Jackson et al., 2015; O'Keeffe and Lavan, 1999).

Aim

As there is limited existing Australian delirium data in elderly ICU patients, we undertook a retrospective chart review to examine the prevalence of delirium in patients aged ≥80 years who required an ICU admission during their hospitalisation, and to compare the Inouye chart-based instrument (Inouye et al., 2005), the Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM-IV) diagnostic criteria (American Psychiatric Association, 2000) and the International Classification of Diseases version 10 (ICD-10) (World Health Organization, 1993) methods for retrospective detection of delirium. We chose these tools as the Inouye chart review is the best available to detect delirium retrospectively; the DSM IV as this was the system that was available at the time of the study which was available to healthcare staff to make a clinical diagnosis of delirium; and ICD 10 codes as these are used for hospital reimbursement for delivery of care related to delirium and contribute to accountability of healthcare cost.

Materials and methods

Participants were drawn from a larger 24-month follow-up study assessing the quality-of-life of patients aged ≥80 years following an ICU admission (Levinson et al., 2016). Patients were recruited from a level three accredited closed unit of the College of Intensive Care Medicine of Australia and New Zealand (CICM) of a large metropolitan private hospital in Melbourne, Australia. Half of the admissions to this unit for patients over the age of 80 years are for elective cardiac surgery.

During the recruitment period (October 2009—October 2012), 348 eligible patients were identified for inclusion in the initial study. Patients were excluded from the study if their anticipated ICU admission was for <24 hours, were non-English speaking, did not/were unable to provide informed consent, and/or were unable to complete the interview component of the broader study

Information was sourced from physicians' correspondence, emergency and elective admission forms, ambulance

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