Nurse practitioners are well placed to lead in the effective management of delirium

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KEY WORDS

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ABSTRACT

Objective
To acknowledge the detrimental impact that delirium continues to have on an individual and at the system level in an Australian acute inpatient setting and highlight the potential role that nurse practitioners can play in evidenced based prevention and management.

Setting
Australian acute inpatient public hospital.

Primary argument
Despite extensive literature and national policy driven initiatives delirium continues to be a neglected iatrogenic condition for elderly people. A local investigation by nurse practitioner candidates in an acute care hospital setting highlights the poor recognition of the problem. Delirium management must be a key part of the scope of practice for the gerontological nurse practitioner.

Conclusions
Recognition and management of delirium is problematic. Leadership and continuity of care using evidence based prevention strategies; accurate diagnosis and treatment are important aspects of the gerontology nurse practitioners' (GNP) scope of practice.

BACKGROUND

The role of the GNP is very new in Australia and to date has largely been explored in residential aged care (nursing home) settings (JBI 2007). At a regional hospital in north-eastern Victoria, gerontology nurse practitioner candidates (GNPC) are undertaking a clinical internship based in an acute inpatient setting and in the hospital administered community programs. These GNPC's have a scope of practice based on the geriatric syndromes (Tinnetti et al 1995; Fried et al 2001; Inouye et al 2007) . As part of this scope they have developed an expertise in the diagnosis and clinical management of delirium under the mentorship of a visiting geriatrician.

In leading an improvement in the care of patients suffering from delirium the GNPCs investigated local prevalence data using an audit study by Speed et al (2007) for comparative values in the Australian health system. Close to 11% of 1,029 patients audited had a probable delirium but only 4 % were diagnosed as such.

The GNPC's undertook a medical record data audit of 4,008 episodes of care, of patients 70 years and over, from a one year period (2008) was undertaken at the sub regional hospital where they work. This audit showed an actual recognition level of delirium at 2.9%. Given that up to 60 % of people aged over seventy years admitted to hospital develop a delirium (Inouye et al 1999; Cole 2004, Olofsson et al 2005), this GNPC audit suggests that in the face of the lack of an active prevention and management program, this suggests that at a minimum, 75% of all deliriums, incident and prevalent, occurring in the acute care setting of this facility were not recognised. These findings reinforce the findings of Hare et al (2008a) and Speed et al (2007).

Despite evidence of a high delirium prevalence being published for a decade, it is clear that delirium remains an under diagnosed condition. This has far reaching implications for patients. It has a devastating effect on carers, a detrimental impact on the staff who struggle to provide safe care and on the health system which must cope with the provision of extra bed days required by patients with delirium. Research suggests that health professionals regularly fail to differentiate between delirium and other cognitive changes in hospitalised patients. The GNP has a key role in ensuring that delirium is accurately diagnosed .

INTRODUCTION

For an older person vulnerable to delirium an encounter with the inpatient health care system can be perilous. The noise, multiple staff, repeat questioning, invasive testing, bright lights, poor pain relief , pre procedural fasting, alien toileting and bathing facilities in addition to an exacerbation in a chronic illness or acute problem (which has brought them to the health service in the first place) is a major challenge to their mental well being. There is an urgent need to provide safe passage for these patients.

Clinicians trained in the specialist care of the older person are crucial to preventing the onset of delirium and to ensuring that patients with delirium are identified and treated. The interdisciplinary team can enable these patients to be well cared for through what is potentially a hostile environment if they have strong clinical leadership and are suitably skilled in the recognition of delirium and implementation of evidence based management. In a rural setting where geriatricians are at best an occasional sessional consultant, and nursing, allied health and medical staff must have generalist skills, the GNP can provide this kind of clinical leadership and maintain a continuity of expert care that ensures the older person receives a holistic approach to their acute health needs and reduces the incidence of delirium. The GNP is well placed to ensure that delirium is accurately identified and treated in accordance with an evidenced based approach.

Definition

Delirium is a short term disturbance of consciousness which lasts for as little as a few hours to as much as a few months (Marcantonio et al 2003; Inouye et al 1999b). Disorientation, problems with memory, thought, perception, and behaviour of an acute onset

and fluctuating course are hallmarks of the condition (Cole 2004). Delirium can manifest as hyperactive, hypoactive, or a mixture of both.

Prevalence

Many studies have examined the prevalence of delirium in the acute inpatient setting. The incidence of delirium has been reported at 7% to 9.6% on presentation to the emergency department, with the incidence in patients admitted to the medical units being as high as 15% - 20% and a further 5% - 10% of patients developing delirium during their hospital stay. Surgical unit patients have a higher incidence at 15% - 53% post operatively, with the greatest incidence found in the intensive care unit, where registration of delirium is 70% - 87% of patients. (Siddiqi et al 2007; Cole 2004; Inouye 2006). Despite this delirium remains poorly recognised as a serious comorbidity for elderly patients in the acute inpatient setting.

Diagnosis

While many people who develop delirium have a pre-existing dementia, delirium is often not detected or is misdiagnosed as dementia or other psychiatric illness even though there are potential strategies to differentiate between dementia and delirium (Cole 2004). Nursing and medical staff fail to recognise and diagnose delirium in over 70% of cases (Marcantonio et al 2002) and the reasons for this are multiple and often complex (Inouye 2006). Bourgeois and Seritan (2006) and McCarthy (2003) have stated that the heterogeneous nature of delirium is contributory to a poor rate of diagnosis. They opine that it is commonly misattributed to dementia or as the natural progression of ageing and its association with inevitable cognitive decline. Alternatively, a hypoactive delirium often results in a diagnosis of depression (Inouye et al 1999a). It was reported in one study that over 40% of patients referred to a consultation liaison psychiatrist for assessment and management of depression were ultimately found to have delirium (Marcantonio et al 2002).

As has been observed by Inouye et al (2001) that hyperactive forms of delirium were more likely to be diagnosed than those with a presentation suggestive of a hypoactive delirium. Understandably the former group created greater demands on staff than the latter and subsequently were noticed.

The causes of delirium are multifactorial. Predisposing factors when influenced by precipitating factors complete a stress-diathesis model (Attard et al 2008), thus triggering delirium. The recognised risk factors, as expressed by Linton and Lach (2007), Capezuti et al (2008) and Millar (2004) are advanced age, visual and hearing impairment, previous cognitive impairment, medical comorbidities, functional impairments, depression, medication use such as benzodiazepines, psychotropics and anticholinergics and prior alcohol abuse.

Precipitating factors are insults caused whilst in hospital. These include, the addition of three or more medications, iatrogenic events such as – a bladder catheter, physical restraint, malnutrition, dehydration, care-setting relocation (high incidence in critical care), electrolyte imbalance and infection, and pain.

Despite the presence in Australia of evidence based guidelines and algorithms (AHMAC 2006) to assist in the diagnosis of delirium the reality is that in the busy hospital environment the imperative is rapid processing of people to facilitate minimum wait times and meet capacity targets (Bezzant 2008). Nowhere is this more evident than with elderly people at risk of delirium. The complex cocktail of acute and chronic physical and mental health that is present in the elderly requires highly skilled assessment and care planning but is usually attended to by the most junior members of the medical team.

Patient outcome

Maher and Almeida (2002) regard delirium as a medical emergency. It has the same morbidity and mortality as sepsis and myocardial infarction (Mandal and Nasim 2007), yet patient management, pathways and recourses differ greatly.

Mortality associated with delirium is high. Inouye et al (1999a) has found that the development of delirium in the acute hospital environment is associated with mortality rates of 25% to 33%. It has been estimated

that the one and six month mortality rate of delirium associated death to be 14% and 22%, respectively, which is approximately twice that of patients without delirium (Cole and Primeau 1993).

The leading complication of hospitalisation for older persons is functional decline (Vorhies and Riley 1993) occurring as early as the second day of admission (Hirsch et al 1990). Functional decline can manifest in the development of delirium and contribute to a number of adverse outcomes, including pressure areas and falls with subsequent injury such as fractured neck of femur (Hirsch et al 1990).

Empana (2004) contend that hip fracture is associated with a 14% - 36% risk of death in the first year and persists for several years after. This must be considered in conjunction with the effect on mortality just from the incidence of delirium alone (Inouye et al 1998). Delirium can result in functional and cognitive decline both in the short and long-term. The short-term repercussions centre on increased length of stay, complications and patient injury (Cole 2004). The long-term repercussions are associated with decreased quality of life and loss of independence as functional and cognitive impairment can persist for at least one year (Siddiqi et al 2007). Delirium results in increased rates of admissions to long-term care facilities (Cole 2004; Marcantonio et al 2003).

Effect of Delirium on families and hospital staff

There is good evidence of the burden delirium imposes not only on patients but on those who care for them. O'Malley et al (2008) examined the literature on the experience of delirium from the perspective of patients, families and staff. Families reported their distress at seeing their loved one in a delirious state and many felt there were deficits in the medical care. Staff emphasised the issues of workload and their problems in resourcing the needs of all patients when the hyperactive delirious patient was so needy of nursing time.

Harrison and Zohhadi (2005) elicited four key themes in their focus group study of issues which affect the optimal care of the elderly patient with mental health problems in the acute hospital ward. These were: 'disruption'; 'role conflict'; 'professional resources'; and 'professional distress.' It could be logically surmised that there is a resulting burnout and absenteeism that accompanies such an occupational experience for staff.

Ageism as a culture

Some of the central reasons for the poor management of delirium include a global knowledge deficit and a health culture that refuses to prioritise the elderly, cognitive impairment and the impact of this at the personal and community levels. Inouye et al (1999a) state that medical and nursing staff spend less time with patients over the age of 65 years. This occurs for a variety of reasons, which includes cultural or societal attitudes toward the care of the elderly. Kane (2002) documents the significant research, which has occurred in the areas of practitioners' attitudes toward older people together with professional gerontological knowledge. This reported literature suggests that on the positive-to negative attitude continuum, health professionals' attitudes to older people falls toward neutral to negative. Poor attitudes, coupled with a gerontological knowledge deficit amongst the current acute hospital health team, does not bode well for the care of the elderly patient.

System Effect

Not only does the failure to recognise the diagnosis as important correlate to an under appreciation of its clinical consequences (Inouye 2006), it has serious detrimental effect on an acute health organisation. Burgeoning costs and an increasing utilisation of the health care system by an ageing population further highlights the importance of the prevention and minimisation of delirium in the acute care setting.

Delirium in elderly acute hospital patients has been associated with longer hospital stays even in analyses that control for severity of medical illness. Delirium is also associated with higher hospital costs and greater likelihood of placement in a nursing home at discharge (Savaray et al 2004). The cost of delirium to the healthcare system is substantial. In the United States of America for the year 2004, Inouye (2006) estimated that delirium complicated hospital stays for over 2.5 million patients over the

age of 65 years amounted to an extra $6.9 billion of hospital expenditure. Although there is some local data as to how the length of stay is impacted upon by delirium (Wong Tin Niam et al 2009), Australia contributes only a small portion to the overall body of the research into delirium, with no current Australian costings available (Ski and O'Connell 2006).

Delirium management outside a structured intervention program generates its own risks and can contribute further comorbidities up to and including sentinel events. The GNPC's noted in their audit work described earlier, that in the period of one week, four incidents of a fall in patients with undiagnosed delirium resulted in a fractured neck of femur. Not only do these preventable occurrences impact on the facilities ability to deliver health care to the community, it also further impacts on the patient's prognosis.

The impact of an unrecognised delirium on the patient not withstanding, there remains a level of unrealised income for a complicated service rendered. The funding model for acute health services in Victoria, Australia follows the recognition of diagnosis related groups (DRG's) with delirium coded as a comorbidity, which has a contributory factor in addition to the DRG base funding amount. A comorbid delirium not only increases the length of stay (McCusker et al 2003), but without adequate clinical recognition and documentation, financially undervalues the care delivered during the admission.

Nurse practitioners as the lead clinician in the detection and management of delirium

Delirium is potentially preventable (Mandal and Nasim 2007). In recognition of this and the personal and public cost of delirium in Australia there has been a strategic push from government to address this issue. The Council of Australian Governments long stay older patients (COAG LSOP) initiative commenced in 2006 (AHMAC 2004) is informed by both State and Commonwealth policies such as 'Improving Care for Older People' (Vic. DoH 2010), 'Care in Your Community' (Vic. DHS 2006)and 'Rural Directions for a Better State of Health' (Vic. DoH 2009). The current focus of the COAG LSOP initiative includes the launch of a resource tool kit to health services across Victoria that will aim to minimise functional decline. The information contained in the tool kit builds on previous work undertaken and uses evidenced based consensus guidelines (AHMAC 2004; AHMAC 2006). Welcome as these resources are, on the ground clinical drivers are crucial to their success.

In the case of delirium awareness, education is vital for prevention and recognition but crucially a diagnosis of delirium needs to be made, documented in the medical history and treatment initiated. The GNP's, as expert clinicians with extended skills in diagnosis, prescribing and referral are well placed to lead, maintain momentum and be accountable for delirium prevention and management within the interdisciplinary team across the acute care health system and into the community.

Clearly from the local audit undertaken by the GNPCs there is a failure to proactively and routinely assess cognition which is vital for early detection of delirium. As a response the GNPCs are evaluating and improving the Risk Assessment completed on admission to include every patient over 65 years. Global risk screening within the first twenty-four hours, carried out by the admitting staff may assist in the identification and differentiation of delirium. Screening questions for all gerontology syndromes can assist with early identification of delirium and referral for specific and comprehensive assessment. Specific assessment may include, but not be limited to the Confusion Assessment Method (CAM) (Inouye et al1990) and the Abbreviated Mental Test (AMT) (Jitapunkul et al 1992) to give an initial guide as to whether a patient has a cognitive impairment and would be at risk of developing a delirium. In line with findings of Hare et al (2008b) the emergency department is a key area for early and accurate assessment and has been targeted by the GNPCs.

McCusker et al (2003) emphasises that it is only through a planned program of delirium screening, prevention, detection and management that hospitalisation will be minimised and outcomes maximised for elderly patients. The GNP is well placed to do this. Highly developed assessment skills,

the capacity to prescribe appropriate medications and advise physicians on risks and advantages of particular drugs while older people are hospitalised mark the GNP out as a key driver for better outcomes in regard to delirium.

Subsequent to this audit a prospective study is being planned with a GNPC intervention. In addition at this particular rural setting, the GNPC's are exploring the concept of a shared bed card with surgeons or physicians and the GNP which would enable the GNP to take a lead role in the areas of care specific to comorbidities of the elderly and in particular delirium. The GNP is taking an important role in delirium education and local clinical research for the broader interdisciplinary team.

CONCLUSION

Delirium in older patients within the acute health setting has a high prevalence and incidence. It can significantly reduce the quality of life and independence of its victims both in the short and long term which in turn has serious financial ramifications for the health system in general.

Despite the known outcomes for delirium, it remains an illness that is not well managed for a variety of reasons including poor diagnosis, culture, attitudes and resources.

The distribution of national evidence based guidelines is a step in the right direction but with the pervasive culture of ageism in a system, staffed primarily by junior clinicians and driven by rapid assessment and throughput, delirium will continue to be a major problem. GNP's have a powerful role to play in consistent diagnosis, acute and long term management of these patients. There is an important role for them in delirium education and research. In addition accurate diagnosis will generate an income stream that can meet the costs of specifically tailored delirium management.

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