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Editorial

Delirium, introduction to a confused mind

Introduction

'The problem of delirium is far from an academic one. Not only does the presence of delirium often complicate and render more difficult the treatment of a serious illness, but also it carries the serious possibility of permanent irreversible brain damage'

Engel and Romano, 1959

This quote, written over 50 years ago by icons in the field of medicine, would seem to be a call for those caring for humans suffering from a serious disease. Even with the present wealth of information on the importance of assessing, preventing and managing delirium in the ICU, effecting the needed changes in care still seems to appeal to caregivers for a substantial change in culture and attention to human factors that are often beyond the scope of training of most clinicians (National Institute for Health and Clinical Excellence, 2017).

Background

Delirium, a condition of acute brain dysfunction affects many hospitalised patients but the most the patients in the intensive care unit (ICU) (Ely et al., 2004; Salluh et al., 2015). The syndrome affects over 50% of ICU patients and is associated with prolonged mechanical ventilation, higher intubation rates, extended ICU and hospital admissions and an increased risk of dementia and institutionalisation (Brummel et al., 2014; Ely et al., 2004; Page et al., 2009; Witlox et al., 2010). It presents a significant economic challenge for healthcare providers and hence can be seen as a public health threat (Milbrandt et al., 2004; Salluh et al., 2015).

International guidelines recommend assessing delirium on a daily basis and using the validated Confusion Assessment Method-ICU (CAM-ICU) or the Intensive Care Delirium Screening Checklist (ICDSC) (Barr et al., 2013; National Institute for Health and Clinical Excellence, 2017). Even though the outcomes and effects of intensive care unit (ICU) delirium seem to be well known, research pointed to a lack of knowledge on, and implementation of screening tools. The screening was found to be at best sporadic. Furthermore, up to 44% of the ICU staff indicated that they are not educated on delirium (Elliott, 2014). This fails to adhere to current delirium guidelines.

The subject of delirium is gaining attention, with booming research and publications in a variety of literature, such as in this journal (see Fig. 1). Still, the research practice gap appears to be wide and translations to clinical practice are required to improve patient care.

Delirium assessment tools for the ICU

Without using a delirium assessment tool health professionals miss over two third of the delirious cases (van Eijk et al., 2009). Several ICU delirium assessment tools have been developed of which the CAM-ICU and the ICDSC showed the best psychometric features (Gélinas et al., 2018). The pooled sensitivity of the CAM-ICU in a *meta*-analysis was 80% with a specificity of 95.9%. The ICDSC showed a somewhat lower 74% sensitivity and 81.9% specificity. However, the use of the CAM-ICU in daily practice by bedside nurses showed lower performance (van Eijk et al., 2011). The selection of an appropriate instrument on specific ICU's may be biased by local research, experience or preferences. The perfect tool considering the fluctuating nature of the syndrome, revealing the severity of delirium and unanimously accepted by all experts has not been developed yet. Given that the available tools provide higher accuracy of diagnoses rather than a clinical assessment, utilising either of them can lead to more appropriate patient management and evidence-based care.

Despite the current use in research and the availability, assessment tools are not adequately used in daily practice due to a variety of barriers. Implementation of research in ICU teams is needed, specifically for delirium. Already studies have has shown that an evidence based implementation strategy led to a higher compliance en interrater reliability (van den Boogaard et al., 2009). The reasons for non-implementation warrant further discussion as this is not adherent to the current guidelines (National Institute for Health and Clinical Excellence, 2017). New developments try to counter the bad compliance and try to focus on electroencephalogram (EEG) assessment. Recently, a delirium monitor installed at the patient's bed was developed. An EEG-based tool for delirium detection with only three electrodes showing, if used appropriately, a sensitivity of 100% (95% CI, 100–100%) and specificity of 96% (95% CI, 88–100%) (van der Kooi et al., 2015). Even the difference between a hypoactive delirium and post-anaesthesia may be correctly determined in 73% (Numan et al., 2017). Therefore, this technology may be promising for the future. The value for daily ICU care, the feasibility and economic aspects, however, must be explored in-depth. Although this monitor may provide a vast improvement in delirium detection, fundamental questions can be asked when nurses prefer monitors above observation and a validated checklist.

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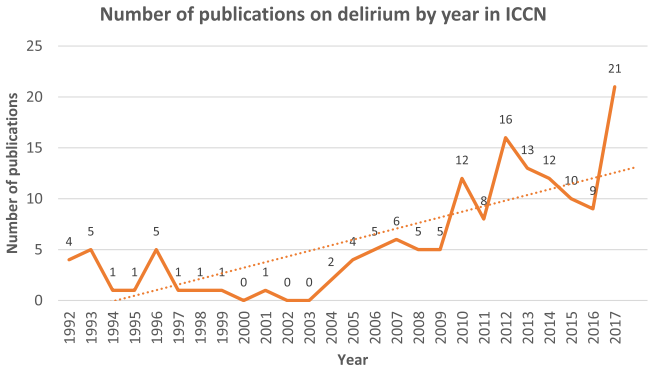

Fig. 1. Publications on delirium in intensive and critical care nursing (January 2018).

Treatment and prevention

Until today, there still is no golden bullet for the treatment or prevention of delirium. The nature of delirium, however, always implies the treatment of the underlying cause whenever possible. Pharmacological ICU delirium prevention seems to fail (Neufeld et al., 2016; Page et al., 2017; van den Boogaard et al., 2018). Non-pharmacological multicomponent interventions focusing on risk factors, such as immobility, functional decline, visual or hearing impairment, dehydration and sleep deprivation, are effective for delirium prevention and hence are to be recommended for overall delirium treatment (Faustino et al., 2017; Inouye et al., 1999; Oh et al., 2017; van de Pol et al., 2017; Van Rompaey et al., 2012). However, the evidence for its use in ICU patients is not strong yet and needs to be confirmed in well-designed studies with large sample sizes.

Current recommendations for pharmacological treatment of delirium, based on recent reviews of the evidence, recommend reserving use of antipsychotics and other sedating medications for treatment of severe agitation that poses risk to patient and staff safety or threatens interruption of essential medical therapies. Thus, pharmacologic prevention and treatment of delirium remains controversial (Oh et al., 2017). At this moment, several studies are underway to determine the effect of the most common used anti-psychotic agent, haloperidol, compared with a placebo in delirium treatment. This way studying the effect of haloperidol was only possible since the latest SCCM guideline dropped the recommendation to use haloperidol or other anti-psychotics for delirium treatment (Barr et al., 2013). Then, from an ethical point of view, performing a randomised controlled trial comparing haloperidol with placebo is allowed.

In the last decade the ABCDEF bundle (Awakening and Breathing Coordination, Delirium monitoring/management, and Early exercise/mobility, Family participation) was implemented in more than 47 countries, with varying degrees of compliance across continents (Morandi et al., 2017). Importantly, the A-to-F bundle is focusing on several important risk factors (e.g. less sedation, improving sleep, improving mobilisation, shortening duration mechanical ventilation) for the development and the maintenance of delirium and hence it is tackling the delirium problem multifactorial. Patients managed with the bundle spent three more days breathing without assistance and risk of delirium was reduced by almost 50% (Balas et al., 2014). Delirium monitoring was implemented in 70% of ICUs, but only 42% used a validated delirium assessment tool. Family members were actively involved in 67% of ICUs; however, only 33% used dedicated staff to support families and only 35% reported that their unit was open 24 h a day for family visits (Morandi et al., 2017). This reflects a significant but incomplete shift toward patient and family-centred ICU care in accordance with e.g. delirium. Although valuable, the effect of the A–F bundle on the long-term is not investigated yet.

Delirium assessment and professionals

It is recommended that clinicians routinely assess patients for delirium using a validated tool to gather information from a structured observation and interview to formally measure the characteristics of delirium (Barr and Pandharipande, 2013; National Institute for Health and Clinical Excellence, 2017). Critical care nurses, who have continuous contact with patients, are in the best position to monitor fluctuations in delirium symptoms, and ensure prompt recognition and introduction of appropriate treatment (Öztürk Birge and Tel Aydin, 2017). However, there is an influence of ICU culture on perceiving delirium as a low priority matter, and replication of some misconceptions about delirium and CAM-ICU (Hickin et al., 2017; Oxenboll-Collet et al., 2018; Rowley-Conwy, 2018; Zamoscik et al., 2017). These studies had some interesting findings:

- Longer exposure to established delirium practices have not resulted in their increased confidence in assessing or managing delirium.
- Current approach to delirium care is seen as unsatisfactory. Nurses should receive support in caring for delirious patients.
- In contrast to cultural viewing of psychological care in ICU, nurses declared their appreciation for non-pharmacological interventions in treatment of ICU delirium, as they felt that the approach to delirium ought to move towards a patient-centred one.
- Assessment tools are perceived to be time consuming.
- There is a lack of medical prioritisation of results.
- Lack of education on delirium is a significant factor and reinforces the stated misconceptions.

There is a clear need to enhance current delirium education, which can be achieved by tailoring ICU training to nurses' specific educational needs. In addition, personal beliefs about delirium have to be addressed, which also affect the process of managing the syndrome (Oxenboll-Collet et al., 2018; Zamoscik et al., 2017). Positive results in similar situations were found with junior doctors (Jenkin et al., 2016; Rowley-Conwy, 2018).

Role of family members

Family members play an important role in preventing and mitigate ICU delirium (Van Rompaey et al., 2016). Interestingly, expanding visiting hours in the ICU resulted in a reduction of delirium (Rosa et al., 2017). Up to 76% of spouses/caregivers reported severe distress related to delirium (O'Malley et al., 2008). More than two thirds of the respondents perceived all delirium symptoms other than somnolence as 'distressing' or 'very distressing' when they occurred 'often' or 'very often'. Many felt there were deficits in the medical care provided with the need for more explanation about delirium and for medical staff to be less distant and to show greater respect for the patient's subjective world.

Family members can provide orientation or memory clues (family photographs, orientation to surroundings) to their relative each day. In addition, family members also can conduct sensory checks (vision and hearing with glasses and hearing aids); and therapeutic or cognitive stimulation (discussing family life, reminiscing) daily. These interventions were feasible and acceptable by family members and nurses (Mitchell et al., 2017).

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