Commentary

Broadening our perspectives on ICU delirium risk factors

Yoanna Skrobik[1]

[1]Department of Medicine and Critical Care, Université de Montréal, Hopital Maisonneuve Rosemont, Soins Intensifs; 5415 boul. de l'Assomption, Montreal, Quebec, Canada, H1T 2M4

Corresponding author: Yoanna Skrobik, skrobik@sympatico.ca

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See related research by Van Rompaey *et al*., http://ccforum.com/content/13/3/R77

Abstract

ICU delirium is associated with poor patient outcome. Risk factor stratification is essential to the understanding, prevention and treatment of this disorder. Alcohol consumption, smoking and prior cognitive impairment appear strongly correlated with delirium risk. Several potentially modifiable associations deserve prospective study: these include administration of sedatives and opiates; multiple catheters; as well as minimizing physical restraints and enabling visitors.

One of the few well-understood features of intensive care unit (ICU) delirium is its association with poor patient outcome. Risk factor stratification is essential to the understanding, prevention and treatment of any disorder, and is a cornerstone of scientific endeavor in clinical research. The largest study on ICU delirium risk factors to date is published in the previous issue of *Critical Care* [1].

Delirium in the critical care setting is said to occur in 22% to over 80% of patients. Such broad variations in delirium incidence may be partly attributable to differences in predisposing risk factors, which may differ between ICUs. Co-morbidities present prior to ICU admission have particularly seldom been considered in ICU delirium studies [2]; several of them are discussed in the paper by Van Rompaey and colleagues [1].

Physicians hold opinions on the risks and benefits of environmental factors (for example, physical restraints) affecting the patient once in the ICU [3]; however, little is known about these factors. Human interaction, such as the effect visitors may have on delirium, remains unexplored in the critically ill patient. Daylight and windows may be beneficial [4]. These environmental features, discussed in Van Rompaey and colleagues' paper [1], are important not only because they are inexpensive but also perhaps because they less likely to harm patients than poorly studied pharmacological interventions.

The patients described in the study were no longer intubated and thus were perhaps less ill [1]; in addition, not all centers collected all risk factor data. Van Rompaey and colleagues nevertheless provide confirmation that several previously identified risk factors remain significant in this multicenter study, challenge other risk factors, and add several risk factors not previously described.

Alcohol use is not screened for routinely, validated alcohol withdrawal scales remain under-used, and intervention for withdrawal is seldom incorporated into treatment plans [5]. This knowledge is all the more surprising because the relevant studies [1,2] identify alcohol abuse as a significant risk factor for developing delirium. Whether alternatives to routine care (that is, benzodiazepines titrated to symptoms, rather than antipsychotics) in these high-risk patients are of any benefit is unknown. Age has been considered a risk factor for delirium in non-ICU populations and by some ICU investigators [6]. When Van Rompaey and colleagues consider pre-existing cognitive dysfunction, tobacco use and alcohol, age does not appear to confer an additional risk for delirium [1]. If dementia is a risk factor but age is not – and studies considering pre-ICU admission co-morbidities would indicate this is true [2] – prevention or prophylaxis of this common and morbid disorder in the ICU should consider different interventions than, say, similar initiatives on the wards. Several previously described predisposing factors (psychoactive drugs, sedatives and opiates) are revisited and their relative contribution to the risk of ICU delirium is tempered by the case mix, and the addition of other variables.

The most novel elements in this study, however, are the environmental risks for ICU delirium. Visible daylight, visitors

ICU = intensive care unit.

and not being physically restrained seem to result in a lower incidence of delirium. It is refreshing to know that in the high-tech environment of ICUs, someone still asks the question 'which inexpensive and nonmorbid approach is useful?'

Combinations of pharmacotherapy and nonpharmacologic interventions such as psychotherapy are used in a broad range of psychiatric disorders. In some situations, this combination is far more effective than either approach alone. Mental health is purportedly based on the 'functioning of a high-order nervous system in constant and complex relation with the personal and social environment' [7]. Several of the points raised by the authors (such as the benefit of company) offer simple venues for nonpharmacologic intervention. Some points fly in the face of conventional safety culture – the rise in odd ratios for delirium in physically restrained patients [1] – yet make sense when one considers how fearful delirious patients are. Other reports have recently corroborated that nonpharmacologic interventions may impact on delirium; early physiotherapy and ambulation appears to be associated with a decrease in delirium days in a recently conducted randomized, controlled study [8].

The issue of delirium treatment in the ICU is far from straightforward. All recommended or clinically used antipsychotic drugs have been validated for the treatment of schizophrenia in young populations over short periods of time. The potential for harm with these drugs is all the more worrisome given that their effectiveness and side effect profiles in older or critically ill populations are largely unknown. There is an urgent need for carefully conducted studies differentiating cognitively intact patients from those with subsyndromal delirium [9] or frank delirium, which will integrate stratification based on risk factors such as those described by the authors. Only then can we move forward with the disorder, which arguably causes patients, their families and their caregivers the most distress during critical illness [10].

Competing interests

The author declares that they have no competing interests.

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