Survey of attitudes and behaviors of healthcare professionals on delirium in ICU

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Objective: To assess the medical community’s awareness and practice regarding delirium in the intensive care unit (ICU).

Methods: One hundred and ten predesigned questionnaires were distributed to ICU practitioners in the affiliated hospitals of Zhejiang University.

Results: A total of 105 valid questionnaires were collected. Totally, 55.3% of the clinicians considered that delirium was common in the ICU. Delirium was believed to be a significant or serious problem by 70.5% of respondents, and under-diagnosis was acknowledged by 56.2% of the respondents. The incidence of ICU delirium is even more under-estimated by the pediatric doctors compared with their counterparts in adult ICU (P<0.05). Primary disease of the brain (agreed to by 82.1% of the respondents) was believed to be the most common risk factor for delirium. None of the ICU professionals screened delirium or used a specific tool for delirium assessment routinely. The vast majority (92.4%) of respondents had little knowledge on the diagnosis and the standard treatment of delirium.

Conclusions: Although delirium is considered as a serious problem by a majority of the surveyed ICU professionals, it is still under-recognized in routine critical care practice. Data from this survey show a disconnection between the perceived significance of delirium and the current practices of monitoring and treatment in ICU in China.

Key words: Delirium; Critical care; Questionnaires

Delirium, a common manifestation of acute brain dysfunction in ICU patients, is defined as a disturbance of consciousness with inattention accompanied by a change in cognition or perceptual disturbance that develops over a short period (hours to days) and fluctuates over time. The development of ICU delirium is increasingly recognized as an independent predictor of many adverse outcomes in critically ill patients, including self-estuation and removal of catheters, failed exudation, longer duration of mechanical ventilation, prolonged ICU and hospital stay, increased health care cost and increased mortality. Additionally, there is a growing awareness of the impact of delirium on negative long-term neuropsychological outcomes of ICU patients, such as cognitive impairment. Clinical studies have shown that about 70%-80% of critically ill patients and 16%-22% of non-critically ill patients were complicated by this acute brain dysfunction in ICU.

In view of the strong impact of delirium on clinical outcomes and high incidence of delirium, the early recognition of delirium may result in better outcome if therapy is started earlier. The clinical practice guidelines for sedation and analgesia in ICU published by the Society of Critical Care Medicine (SCCM) strongly recommended that patients be routinely screened for delirium using a validated assessment tool. The American Psychiatric Association (APA) drew the same conclusion in their 2004 Guideline for the Treatment of Patients with Delirium. It is still bewildering, however, foreign clinical studies have shown that there are serious inconsistencies and gaps between the intellectual awareness of the dangers of delirium and the absence of clinical action. Our previous epidemiologic study has showed that patients with sepsis, especially with severe sepsis, are common critically ill patients in Chi...
nese ICUs, who may easily suffer delirium during their ICU stay. As the most populous country in the world, China still lacks the information about how healthcare professionals actually monitor delirium on patients, especially the critical patients in the ICU routinely. The aim of this survey was to study the condition of delirium monitoring and standard treatment, so as to provide an overview of ICU delirium awareness in China.

METHODS

Survey design

The questionnaires on delirium in the ICU was developed based on Ely et al. and Patel et al.’s questionnaires. No definition of delirium was present on surveys. The final survey consisted of four parts of self-ministered questionnaire with multiple choice and subjective questions. The content of the present survey was mainly questions about delirium in the critical care, including incidence, screening protocols, the impact of risk factors of delirium, treatment and clinical recognition.

In March 2009, a survey was conducted in ICUs of Zhejiang University hospitals, including an adult medical ICU (AMICU) and a pediatric ICU (PICU). Questionnaires were distributed to 110 randomly chosen staff members in the two ICUs, including 30 physicians (17 in AMICU and 13 in PICU, \( P > 0.05 \)), 72 nurses (48 in AMICU and 24 in PICU, \( P > 0.05 \)) and 3 respiratory care practitioners (all in AMICU, \( P > 0.05 \)). On average, there are 100 critical care patients in AMICU every month, 40% of whom are mechanically ventilated patients, and 92 critical care patients in PICU every month, 48% of whom are mechanically ventilated patients. A questionnaire was considered valid if all multiple choice questions and subjective questions about screening and treatment of delirium were completed.

Statistical analysis

The data on paper surveys were put into a Microsoft Access database. The analysis included descriptive summaries of categorical variables, which are given as frequencies and percentages. When appropriate, Pearson’s Chi-square tests were used for response difference of healthcare professionals between AMICU and PICU. Only questions that had the same or similar wording in both surveys were compared. A \( P \) value of less than 0.05 was considered as statistical significance.

RESULTS

Demographics

A total of 105 out of 110 surveys were completed by healthcare professionals. The data were divided into two parts: the AMICU surveys and the PICU surveys. Details of the survey respondents are presented in Table 1.

Table 1. Demographics of survey respondents (n, %)

<table>
<thead>
<tr>
<th>Items</th>
<th>MICU</th>
<th>PICU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of healthcare professional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors</td>
<td>17 (25)</td>
<td>13 (35.1)</td>
</tr>
<tr>
<td>Nurses</td>
<td>48 (70.6)</td>
<td>24 (64.9)</td>
</tr>
<tr>
<td>Respiratory therapists</td>
<td>3 (4.4)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Years of practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>26 (38.2)</td>
<td>16 (43.2)</td>
</tr>
<tr>
<td>5-9</td>
<td>21 (30.9)</td>
<td>10 (27)</td>
</tr>
<tr>
<td>10-19</td>
<td>15 (22.1)</td>
<td>8 (21.6)</td>
</tr>
<tr>
<td>( \geq 20 )</td>
<td>6 (8.8)</td>
<td>3 (8.1)</td>
</tr>
</tbody>
</table>

Epidemiology of delirium in ICU

When asked “what percentage of all your patients or the mechanically ventilated patients experience delirium at some time point in ICU”, 40% of the healthcare professionals thought that more than 25% of their patients experience delirium. Only less than 1% thought that over 75% of their patients experience it. Based on the statistics, 57.3% of the healthcare professionals in AMICU thought that over 25% of their patients experience delirium, whereas only 8.1% in PICU agreed this (\( P < 0.01 \), Fig.1). As for the mechanically ventilated patients, 67.7% and 27% (\( P < 0.01 \)) of the respondents in AMICU and PICU respectively thought that at least a quarter or more of these patients experience delirium (Fig.2). Only 7.4% of the respondents in AMICU and 2.7% in PICU (\( P > 0.05 \)) agreed that over 75% of these patients experience delirium. The respondents were also asked to show their agreement on some statements about delirium in ICU. The results are shown in Table 2.

Risk factors for delirium

The top three risk factors for development of delirium were believed to be primary disease of brain (agreed by 82.1% of the respondents), sedation or analgesia (71.4%) and hypoxemia (68.6%). The remaining risk factors are age (60%), shock (58.1%), postoperation (55.5%), acute respiratory distress syn-
Diagnosis of delirium

Delirium was recognized as an under-diagnosed syndrome by 67.6% (46 of 68) of the healthcare professionals in AMICU and 35.1% (13 of 37) in PICU \( (P<0.01) \). Although about 56% of the respondents in AMICU and 35.1% in PICU \( (P<0.05) \) thought that the relevant literature supports routine monitoring of delirium in ICU, none of the ICU professionals surveyed were actually doing so, and only 5% of the healthcare professionals have sporadically assessed patients with changed mental status. When asked “what can be used to screen delirium”, the vast majority (92.4%) of respondents had no idea, while only 7.6% of the respondents thought the following scales can be used as assessment tools: Glasgow Coma Scale (GCS), Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) and Richmond Agitation Sedation Scale (RASS). These assessment methods reported by respondents were mainly learned from literature or seminars of continuing education.
delirium", 57.1% considered that the delirium patients would appear irritable and hyperactive, while 35.2% could not tell any symptom. Other manifestations of delirium listed by medical staffs were hallucinations (reported by 18.1% of the respondents), orientation disorder (14.3%), apathy (12.4%), unconsciousness (9.5%), elevated blood pressure and shortness of breath (3.8%).

Outcomes of delirium

Delirium was considered as a significant or very serious problem in ICUs by 70.5% of healthcare professionals. ICU delirium was thought to have more significant impacts on the outcome of the elderly than the young by 60.3% of the respondents in MICU and 45.9% in PICU respectively (P>0.05). Nearly 68.5% of the respondents thought that delirium can interfere with normal ventilator weaning (Table 2).

Treatment of delirium

Most people surveyed (88.2% in MICU and 67.6% in PICU, P<0.05) agreed that delirium was a problem requiring active intervention. However, 66.7% of medical personnel were not quite sure about which drugs can be used to treat delirium. When asked “what drugs should be used to treat delirium”, only 24.8% of the respondents thought of haloperidol, 6.7% mentioned olanzapine, and less than 1% reported propofol or midazolam. However, in their clinical practice, few doctors used these drugs to deal with the patient’s delirium specifically. Almost none of the respondents were clear about the medication dosage and the application timing of these drugs or familiar with the side effects of these drugs for the ICU patients.

DISCUSSION

This survey firstly investigated the critical care community’s opinions regarding delirium and the current state of monitoring and treating delirium by medical staffs in AMICU and PICU in China. The data revealed that both ICU nurses and intensivists who are either in AMICU or PICU believe that delirium is a common, serious and under-diagnosed problem in critically ill patients, with adverse impacts on the clinical outcomes. However, the responses of survey participants indicate that current screening practices do not match the requirement of the SCCM’s and the APA’s guidelines,3-5,8-12 and many respondents even have no idea of these guidelines or the monitoring tools. Interestingly, the incidence of ICU delirium is even more under-estimated by the pediatric intensivists compared to their counterparts in AMICU. The pediatric intensivists also knew little about the incidence, clinical presentation, treatment and consequence of childhood delirium. To some extent, this might be attributed to lack of appropriate diagnostic criteria and assessment tools in children,27 and unawareness of delirium in PICU patients.

Previous surveys have found that ICU clinicians tend to under-estimate the prevalence of ICU delirium compared with the incidence documented by a series of epidemiological studies.18-21 In the present survey, the prevalence of delirium estimated by our respondents was even lower than that of the previous surveys abroad. This may be due to a misunderstanding of the delirium definition or a fundamental lack of awareness of this problem, since the majority of the ICU professionals surveyed have not read any publications or attended any seminars on this issue within last year. Moreover, delirium is a global manifestation of brain dysfunction, yet different subtypes such as the “agitated” hyperactive form and the “quiet” hypoactive form may have markedly different clinical manifestations.24, 25 This would make it difficult to assess delirium by ICU staffs and thus lead to under-estimation by our respondents.

As reported by the respondents in our survey, primary disease of the brain is believed to be a major contributor to the occurrence of delirium, which is inconsistent with the literature,8 but some research also indicated that it is an important risk factor for delirium.25-26 Age is also considered to be an important factor by our respondents and Ely et al’s report,22 which is inconsistent with Ouimet’s result.23 The difference may be due to different assessment protocols and tools used in different researches. Evidence from previous studies suggests that delirium is associated with many negative outcomes.3,5,8-12 Fortunately respondents of our survey also considered that delirium was a significant or very serious problem and agreed that prolonged mechanical ventilation might be complicated with delirium.

Although the respondents recognized the importance of treating delirium and possibly even preventing it, they admitted that only a few patients were specifically treated for this condition. However, haloperidol has been given the Grade C recommendation by the Soci-
The present survey has several limitations. First, self-reporting approach in this survey could lead to inaccuracies through misinterpretation of questions or poor recollection of their clinical experiences. Second, the pool of respondents is constituted by ICU professionals from two hospitals that affiliated to the same university, which may potentially lead to a selection bias. Third, participants might have been influenced by the halo effect.

Conclusion

In conclusion, the results of this survey show that health care practitioners recognize delirium as a common problem in ICU, while there is a remarkable disparity between the opinion that delirium is an important factor influencing the patients’ outcome and the current practice in delirium monitoring and treatment, as well as between the perceived prevalence of delirium and the established data. The current situation of delirium monitoring and management in Chinese ICUs urgently needs to be greatly improved. The data from this survey will serve as a baseline of comparison for future condition. A large-scale follow-up study on attitudes and behaviors regarding delirium is required in the future.

REFERENCES


(Received June 4, 2009)