Is your ICU bed position contributing to your risk of delirium?

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Introduction

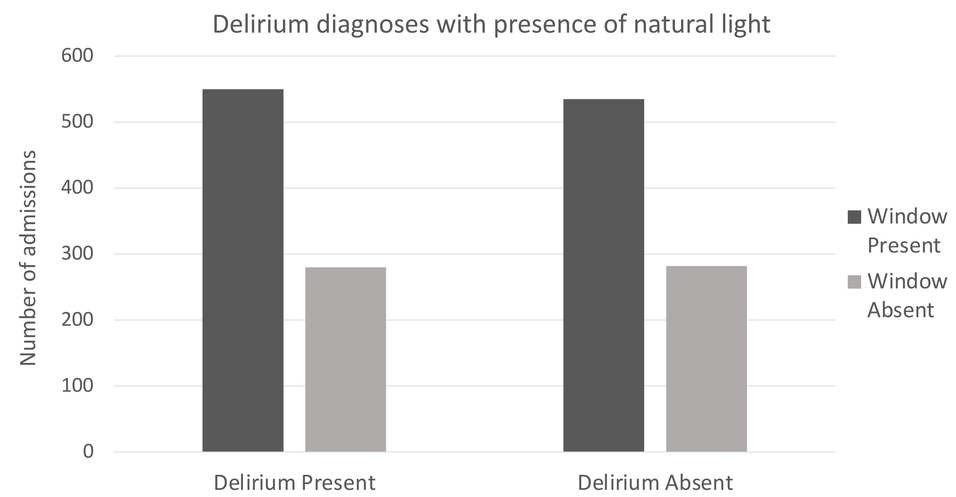
Delirium is a reversible condition of fluctuating consciousness and cognition which occurs in up to 80% of the critical care population. It is a recognised contributor to morbidity and mortality. Environmental factors including isolation and lack of visible daylight have been described as risk factors for delirium [1]. At the Queen Elizabeth University Hospital (QEUH), Glasgow, we have two ICU units. Unit 3 has fewer windows and less natural light than unit 4, thus we hypothesised that there would be a difference in delirium incidence between the two units. We also seek to examine whether delirium is less prevalent when patients are in bedspaces with a window.

Methods

With information governance approval, we extracted data from the CareVue database using SQL and analysed the data using R. Ethical approval was not required. Information on 2314 episodes of patient care were examined between 2017 and 2020. Patients who moved between units or changed bed positions were excluded. The CAM-ICU test is done once daily during the ward round and delirium is recorded as present if the test is positive at all during their stay. Results for presence of delirium depending on the patients' admission unit or adjacency to a window were assessed for significance using a Chi-square test.

Results

Of the 2314 admissions, 917 patients suffered from delirium during their ICU stay and 851 did not. 546 patients could not be assessed due to deep sedation throughout their stay and were removed from subsequent analyses. When unit 3 was compared with unit 4, there was no difference in proportion of patients diagnosed with delirium, X^2 (d.f. = 1, n=1765) = 1.07, p = 0.3. Beds with windows were compared to those without windows and there was also no difference in proportion of patients with delirium, X^2 (d.f. = 1, n=1647) = 0.08, p = 0.78. Graph 1 demonstrates the absolute admission numbers and whether these patients were positioned next to a window.



Graph 1. Number of delirium diagnoses when patients were placed next to a window versus those who were not

Discussion

These results disprove our hypothesis that bed location and window exposure within our unit contributes to the incidence of delirium. This is in keeping with a prospective trial [2] indicating that natural light does not reduce delirium burden in ventilated patients. Further study with this data could examine whether admission to side rooms might alter delirium burden as 4 out of 20 level 3 beds in our hospital are in a side room. However, this data does highlight the prevalence of delirium within our ICU as being 51.8% of those assessed. Further work and analyses need to target methods of reducing this prevalence.

References

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