

COMMENTS TO RESEARCH ARTICLES

Incidence of delirium according to the visiting regime in an intensive care unit[☆]

Incidencia de delirio según el régimen de visitas en una unidad de cuidados intensivos

Rosa RG, Falavigna M, da Silva DB, Sganzerla D, Santos MMS, Kochhann R, et al. Effect of flexible family visitation on delirium among patients in the intensive care unit: the ICU visits randomized clinical trial. JAMA 2019 July 16;322(3):216–228.

Abstract

Importance: The effects of intensive care unit (ICU) visiting hours remain uncertain.

Objective: To determine whether a flexible family visitation policy in the ICU reduces the incidence of delirium.

Design, setting and participants: Cluster-crossover randomized clinical trial involving patients, family members, and clinicians from 36 adult ICUs with restricted visiting hours (<4.5h/day) in Brazil. Participants were recruited from April 2017 to June 2018, with follow-up until July 2018.

Interventions: Flexible visitation (up to 12 h/day) supported by family education ($n=837$ patients, 652 family members, and 435 clinicians) or usual restricted visitation (median, 1.5 h/day; $n=848$ patients, 643 family members, and 391 clinicians). Nineteen ICUs started with flexible visitation, and 17 started with restricted visitation.

Main outcomes and measures: Primary outcome was incidence of delirium during ICU stay, assessed using the CAM-ICU. Secondary outcomes included ICU-acquired infections for patients; symptoms of anxiety and depression assessed using the HADS (range, 0 [best] to 21 [worst]) for

family members; and burnout for ICU staff (Maslach Burnout Inventory).

Results: Among 1685 patients, 1295 family members, and 826 clinicians enrolled, 1685 patients (100%) (mean age, 58.5 years; 47.2% women), 1060 family members (81.8%) (mean age, 45.2 years; 70.3% women), and 737 clinicians (89.2%) (mean age, 35.5 years; 72.9% women) completed the trial. The mean daily duration of visits was significantly higher with flexible visitation (4.8 vs 1.4 h; adjusted difference, 3.4 h [95% CI, 2.8 to 3.9]; $P<.001$). The incidence of delirium during ICU stay was not significantly different between flexible and restricted visitation (18.9% vs 20.1%; adjusted difference, -1.7% [95% CI, -6.1% to 2.7%]; $P=.44$). Among 9 prespecified secondary outcomes, 6 did not differ significantly between flexible and restricted visitation, including ICU-acquired infections (3.7% vs 4.5%; adjusted difference, -0.8% [95% CI, -2.1% to 1.0%]; $P=.38$) and staff burnout (22.0% vs 24.8%; adjusted difference, -3.8% [95% CI, -4.8% to 12.5%]; $P=.36$). For family members, median anxiety (6.0 vs 7.0; adjusted difference, -1.6 [95% CI, -2.3 to -0.9]; $P<.001$) and depression scores (4.0 vs 5.0; adjusted difference, -1.2 [95% CI, -2.0 to -0.4]; $P=.003$) were significantly better with flexible visitation.

Conclusions and relevance: Among patients in the ICU, a flexible family visitation policy, vs standard restricted visiting hours, did not significantly reduce the incidence of delirium.

Comment

Delirium is the sudden alteration of consciousness with inattention, accompanied by cognitive changes and/or changes to perception that fluctuate for a short period of time (h/days). Up to 80% of patients in the ICU experience delirium caused by medical problems, surgical procedures, invasive procedures, the use of medication or diverse harmful stimulants (psychological stress factors, mechanical ventilation, noise, light, interrupted sleep or sleep deprivation). Delirium is associated with a longer duration of mechanical ventilation and a longer stay in the ICU, together with a higher risk of death, disability and long term cognitive impairment.¹ Early recognition of delirium is therefore important and ICU staff need to pay careful attention to monitoring the appearance of delirium and to its prevention and management.

DOI of original article: <https://doi.org/10.1016/j.enfi.2020.04.002>

[☆] Please cite this article as: Muñoz Camargo JC, Incidencia de delirio según el régimen de visitas en una unidad de cuidados intensivos. Enferm Intensiva. 2020;31:94–95.

Assessment of findings

This study concluded that a flexible policy for the visiting regime in the ICU does not significantly reduce the rate of delirium compared with the restricted visiting regime. The short duration of the flexible visiting regime implementation could have impacted the result. Extended visiting hours was the only factor of protection studied for the presentation of delirium but research on its prevention advocates a multi-modal approach with the inclusion of non-pharmacological methods for its reduction or prevention; reducing anxiety; counseling patients; reducing background noise; the use of alarms; establishing a use of light in keeping with the circadian cycles of day and night, and promoting early mobility.² Early mobility has been proven to have different beneficial effects on ICU patients, the most striking of which are the reduced need of sedation, fewer days on mechanical ventilation, a shorter stay in the critical care unit and a shorter hospital stay, with several authors also demonstrating a reduction in the rate and duration of delirium.³ These non pharmacological interventions were not assessed by the authors. Neither did they, a priori, take into account strategies to prevent and/or treat delirium acquired in the ICU, such as prevention and pain management, daily sedation interruptions, or the minimization of exposure to benzodiazepines and opioids, which may have impacted the primary results of the research. Pain has been linked to the development of post-traumatic stress and delirium, and an appropriate monitoring of analgesia is therefore essential for minimizing its appearance. The permanent assessment of sedation requirements has proven to be associated with the appearance and duration of delirium.

Although the etiology of ICU delirium is often due to multiple causes and is sometimes not fully understood, sleep deprivation is considered to be a major factor in its development. Monitoring of sleep in ICU patients reveals that sleep is severely interrupted, that ICU patients have extreme fragmentation of sleep.^{4,5} The large amount of study data did not include any collected data on study participant sleep assessment, despite the fact that the interruption of the sleep-wake cycle in the ICU is another delirium risk factor.

Another striking fact from the report was that although during the visiting regime family members were allowed to stay for up to 12 h, the average visit per patient was 4.8 h, a relatively short period. It is also unclear as to whether this average visiting time included periods when the family members withdrew from the ICU when patients were undergoing critical care procedures. This factor could have impacted the real time of the stay in the unit.

The layout and physical environment of ICU participants is an interesting issue since in several cases, and especially in old hospitals where international standards and recommendations are not upheld, there are open units where several patients and family members are together in the same space

and there are no separate rooms for privacy. The emotions (fear, anxiety, uncertainty) linked to the presentation of delirium may therefore have been curtailed.

There is a belief among professionals that the extension of visiting hours affects patients and their families because it prevents rest, interferes and delays care and increases stress and infections, among other aspects.⁶ The flexible visiting regime did not create a higher risk of acquired infections or adverse events. Evidence has shown that there are more benefits than risk linked to the flexibility of visiting hours and participation from family members. The group receiving flexible visits were less prone to anxiety, depression and were more satisfied than the group with a restricted visiting regime. The professionals did not perceive of any impact on patient care or conflicts with family members during the open visiting regime. Neither was any increase in professional burn-out syndrome observed.

In the light of the evidence found it may be concluded that flexible visiting regimes do not harm patients. In general the family members referred to higher satisfaction with the open visiting regime system. Putting different measures into practice aimed at reducing the rate of delirium in the form of a "package of measures" or "bundle" such as the "ABCDEF Bundle" (Awakening and Breathing Coordination, Choice of drugs, Delirium monitoring and management, Early mobility, and Family engagement) could have a higher impact than when these measures are used on a separate basis.

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