

Evaluation of the prevalence of delirium in a pediatric intensive care unit and the medications administered on delirium positive days

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Background

Delirium is a fluctuating, acute disturbance of cognition and consciousness.^{1,2} It can be difficult to detect and affects patients of all ages.^{1,2} Delirium in critically ill hospitalized adult patients is associated with poor outcomes, including a longer length of hospital stay and increased mortality.¹ It may be associated with the use of central nervous system altering medications, such as opioids and benzodiazepines or the withdrawal from these.¹

Delirium is classified into three subtypes: hyperactive, hypoactive, or mixed.¹ Patients with hyperactive delirium are usually agitated, restless and are more commonly diagnosed because of the higher level of disturbance to hospital staff.¹ Hypoactive and mixed delirium are more common than hyperactive.¹ All types of delirium are associated with the same poor outcomes.¹

There are few case series describing the occurrence, treatment and associated outcomes of delirium in critically ill children.⁴

Objectives

The purpose of this study was to determine the prevalence of delirium in critically ill children and review the medications these patients received while positive for delirium.

Methods

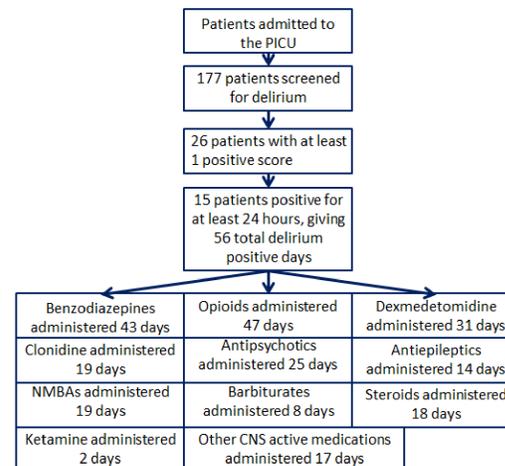
- Type: retrospective, descriptive study
- Population: patients admitted to the pediatric intensive care unit (PICU) between December 1 and December 31, 2013
- Delirium Assessment: Using the Cornell-Pediatric Assessment for Delirium (CAP-D) tool³
 - Intubated patients evaluated every 4 hours
 - Non-intubated patients evaluated every 12 hours
- Patients were considered delirium-positive if their score using the tool was 10 or greater
- On days the delirium lasted 24 hours or more, the medications administered were examined and those with CNS activity or prior association with delirium were tallied and reported

Figures

Cornell's Assessment of Pediatric Delirium (CAP-D) BED # _____ Date _____

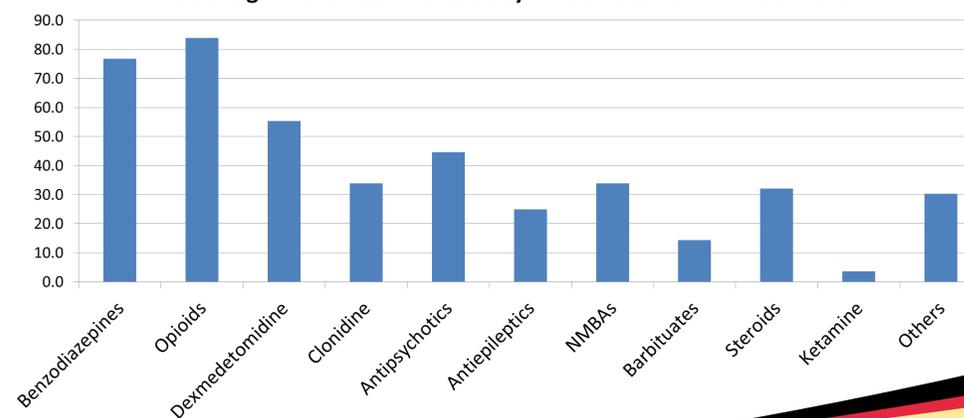
Score 0-4: Always (0), Often (1), Sometimes (2), Rarely (3), Never (4)	Score						Score 0-4: Never (0), Rarely (1), Sometimes (2), Often (3), Always (4)	Score					
	0800	1200	1600	2000	2400	0400		0800	1200	1600	2000	2400	0400
1. Does the child make eye contact with caregiver?							5. Is child restless?						
2. Are the child's actions purposeful?							6. Is child inconsolable?						
3. Is the child aware of his/her surroundings?							7. Is there very little movement?						
4. Does the child communicate needs & names?							8. Does it take the child a long time to respond to interactions?						

Total score of > 10 indicator of delirium



Results

Percentage of Delirium Positive Days Patients were on Medications



Results, cont.

- Average daily census: 17
 - Delirium prevalence: 0-15% daily
- Benzodiazepines administered included diazepam, midazolam, clonazepam, lorazepam, and clobazam
- Opioids administered included morphine, methadone, hydromorphone, fentanyl and oxycodone
- Antipsychotics administered included: risperidone (n = 4), quetiapine (n = 1), and haloperidol (n = 1)

Patient	Age	Weight (kg)	Risperidone Dose (mg/day)
A	20 mos	11.6 - 13.8	0.5
B	14 years	37.1 - 49.5	2.5 - 5
C	23 mos	10.7	0.1 - 0.2
D	10 mos	7.8	0.1

Conclusions

The prevalence of delirium in our PICU is consistent with the current described pediatric evidence. Most patients experiencing delirium were on at least one centrally acting agent that could contribute to mental status changes. Further investigation is needed to determine the role, if any, these agents play in the development of delirium in critically ill children.

References

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Notes

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Authors have no conflicts of interest to disclose.