

IMPROVING THE QUALITY OF CARE USING A DELIRIUM PREVENTION BUNDLE

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Introduction

Delirium is a common and serious complication in ICU patients, especially those requiring mechanical ventilation. It is associated with increased morbidity, mortality, prolonged ICU stays, and long-term cognitive decline. Both modifiable and nonmodifiable risk factors contribute to its development. Post-ICU syndrome, which includes lasting physical, cognitive, and psychological impairments, also affects caregivers and families. To address these outcomes, evidence-based guidelines and preventive strategies have been implemented. The ABCDEF bundle promotes a holistic approach to ICU care, emphasizing pain management, light sedation, early mobility, and family engagement. Early recognition and comprehensive interventions are essential to reduce delirium incidence, improve patient recovery, and enhance overall quality of life after discharge.

Aim of the work

The aim of this study is to determine whether the ICU delirium prevention ABCDEF bundle significantly reduces the incidence of delirium and number of days with delirium compared to the standard of care delirium prevention strategies in mechanically ventilated patients.

Patients

Sixty mechanically ventilated patients admitted to Critical Care Department of Alexandria University Hospitals according to sample size calculation.

Methods

This study will be conducted in the Critical Care Department of Alexandria University Hospitals after obtaining ethical approval and informed consent from patients' relatives. Participants will undergo comprehensive clinical assessment, laboratory tests, and scoring using APACHE II and SOFA. Patients will be randomly assigned to either the intervention group, receiving the ABCDEF bundle, or a control group with standard care. Delirium will be assessed daily using CAM-ICU and RASS, with causes identified using the “IWATCHDEATH” mnemonic. Treatment will focus on correcting underlying factors. Primary outcome measures include the incidence and duration of delirium, while secondary outcomes involve ICU/hospital stay duration, mechanical ventilation days, and mortality rates.

Results

Table (1): Distribution of studied cases according to primary outcomes

Primary Outcomes	Intervention Group	Control Group	Statistical Analysis	
Incidence of Delirium			x ²	p
- No. (%)	6 (20.0%)	14 (46.7%)	5.729	0.038*
Number of days with delirium			t	p
- Mean	2.8	4.6	11.695	0.005*
- SD	1.4	2.1		
- Minimum	1	2		
- Maximum	5	7		
- Median	3	4		

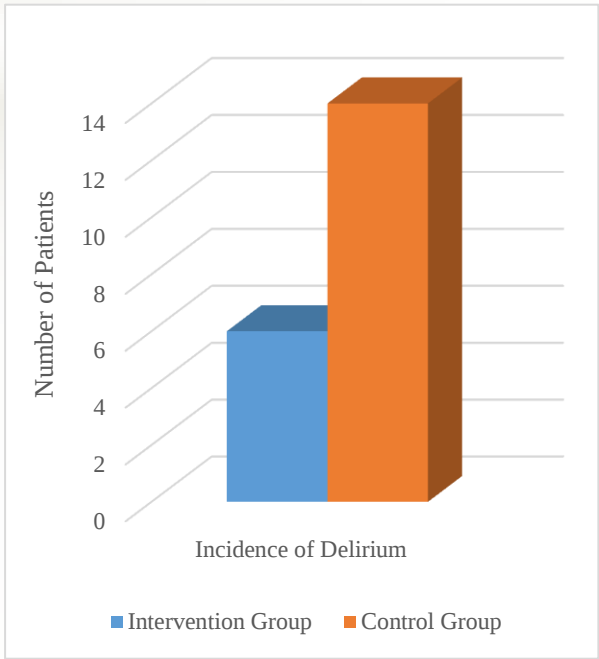


Figure (1): Incidence of delirium in studied cases.

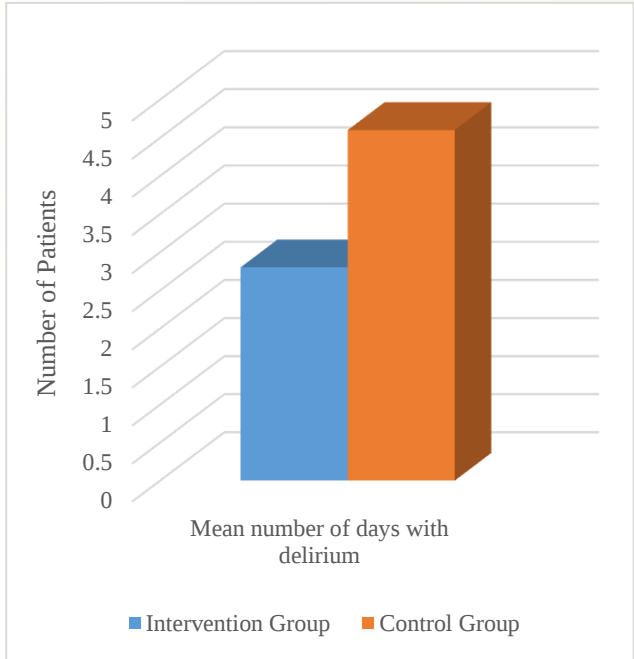


Figure (2):Number of dayes with delirium in studied cases.

Table (2): Distribution of studied cases according to possible causes of delirium

Possible Causes of Delirium	Intervention Group	Control Group	Statistical Analysis	
			x ²	p
- Delayed weaning from mechanical ventilation	3 (10.0%)	5 (15.7%)	0.209	0.474
- Prolonged sedation	3 (10.0%)	4 (13.3%)	0.758	0.459
- Inadequate sleep hygiene	0 (0.0%)	2 (6.7%)		
- Reduced patient mobility	0 (0.0%)	3 (10.0%)		
Total	6 (20.0%)	14 (46.7%)	5.729	0.038*

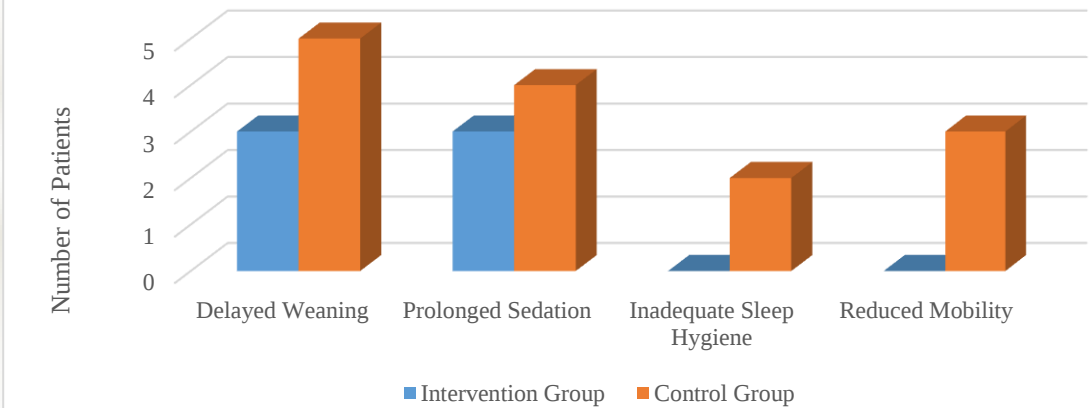


Figure (3): Comparison of possible causes of delirium between studied groups.

Conclusion

The application of the ABCDEF bundle significantly reduced the incidence, severity, and duration of delirium among mechanically ventilated ICU patients compared to standard care.