

**Incidence and Risk
Factors of Delirium in
the Intensive Care Unit**

دلیر یوم

delirium

مشخص همیشه با

اختلال هوشیاری

تغییر شناخت

در زمان کوتاه رخ می دهد
(از چند ساعت تا چند روز)

در طول روز
نوسان

1-Hypoactive delirium - Patients appear subdued, withdrawn and have a poor response to stimulus

2 Hyperactive delirium - Patients may display agitation or aggression and may experience delusions or hallucinations

3-Mixed delirium - Patients fluctuate between hypo and hyperactive subtypes

Patient and Iatrogenic Risk Factors for ICU Delirium

Patient Factors	Iatrogenic
Advanced age	Hypoxia
Alcoholism	Metabolic disturbances or electrolyte imbalances
Smoking	Dehydration or hypotension
Hypertension	Prolonged pain
Preexisting cognitive impairment	Psychoactive medications
Depression	Sedatives and analgesics
APOE4 polymorphism	Sleep deprivation
Chronic illness	Respiratory disease or mechanical ventilation
Severity of illness (APACHE II score)	Prolonged restraint use or immobility
	Withdrawal syndromes
	Severe sepsis or other infection
	Hyperthermia
	Head trauma or seizures
	Vascular disorders or anemia

Most common form of delirium in ICU patients.

Attention Deficits
Difficulty focusing or
maintaining attention

Disordered Thinking
Disorganized, illogical,
or incoherent responses

Fluctuating Changes in Behavior
Behavioral changes fluctuate over
a 24-hour period

Hypoactive Form
Patient is agitated

Hyperactive Form
Patient is agitated

مهم ترین علل ابتلا به دلیریوم

بیماری های سیستم عصبی مرکزی مانند (صرع ضربه مغزی عفونتها ضایعات فضاگیر) مسمومیت های دارویی ترک مواد مانند الکل اختلالات طبی عمومی مانند (اختلالات قلبی ریوی کلیوی متابولیک و غیره)

دارو های دلیریوم زا

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درمان
غیردارویی

درمان کافی درد
برقراری دوره خواب منظم
افزایش زمان های خروج از بستر
تشویق به ملاقات خانوادگی
محدودیت استفاده از داروهای دلیریوم را مانند نورازپام میدازولام
فرصت به بیمار جهت عبادت کردن باعث کاهش اضطراب
• از بین محرک های محیطی
آگاهی از مکان زمان و شخص
حفظ تعادل مایعات و الکترولیت
روشن نگه داشتن اتاق در روز و حذف سایه ها
بیان کردن پیام ها به طور واضح
حذف محدود کننده های فیزیکی
کاهش صدا های آلام
حفظ بهداشت دهان

H هیپوکسی
T تولیک
I عفونت
N نرولوژیک

به طور کلی علت
دلیریوم در یخس مراقبت
های ویژه
thin

Introduction

Delirium is an acute confusion that is associated with impaired consciousness, decline in cognitive function and attention, sudden onset, and a period of fluctuations

. It is clinically important because it has a considerable impact on morbidity and mortality rate

Predisposing factors include age, gender, comorbidities, and illness severity. Precipitating factors include medications (including sedatives), application of mechanical ventilation (MV), and hospital or ICU length of stay (LOS) [11–14]

The purpose of this prospective study was to determine the incidence, risk factors, and impact of delirium on outcomes in ICU patients. In addition, the scoring systems were measured consecutively to characterize how these scores changed with time in patients with and without delirium.

Material and Methods

Study Design and Participants. In this prospective cohort study, 400 consecutive patients due to trauma or surgery admitted to the medical ICU at Be'sat Hospital in Hamadan, Iran, between 2018 and 2019 were screened for delirium. This cohort study was conducted and reported in accordance with the recommendations of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement [22]. The study protocol was reviewed and approved by the Ethics Committee of Hamadan University of Medical Sciences, Hamadan, Iran, with code IR.UMSHA.REC.1397.861. In addition, patients or their relatives were informed about participation in the study by the physician at the time of admission with consent in all cases.

Results1

Baseline Demographic, Clinical Characteristics, and Outcomes. Delirium occurred in 108 (27%) patients during their ICU stay, and the median onset of delirium was 4 (IQR 3–4) days after admission

However, patients with delirium were mostly male, single, and smokers. Delirious patients significantly used higher mechanical ventilators, higher incidence of head trauma, and lower incidence of VAP and received more antibiotic therapy compared to patients without delirium

Results2

Logistic Regression. In multivariate logistic regression analysis, unmarried status, smoking, use of mechanical ventilator, head trauma, high SOFA score, and high ICU LOS were independent risk factors for delirium.

Results3

. *Cox Regression.* A proportional hazard Cox regression analysis with time-varying covariates, taking delirium as the event, and the time to onset of ICU delirium was used in the study,

Results4

For the RASS score, the average score of patients with delirium was increased closer to time of onset of delirium ($P < 0:001$), while, in both APACHE IV and SOFA scores, we had a significant downward trend. In addition, time trends of scoring system for 14 days continuously and day 28 during ICU stay were recorded, which can see the results in Supplementa

Result5

Sedative and Analgesic Medications. The mean cumulative administered dose of sedative and analgesic medication such as morphine, methadone, fentanyl, midazolam, dexamethasone, diazepam, and hydrocortisone used in this cohort is presented in Table 4. The mean cumulative doses of these medications were significantly higher in patients in the delirium group ($P < 0:001$), but only hydrocortisone was used in patients without delirium.

Result6

Antibiotic Therapy. Antibiotic therapy was given to 79.6% of the patients with delirium and to 64.4% of the patients without delirium. Patients with delirium received antibiotic significantly more often than patients without delirium

Conclusion

Despite sedative and analgesic medications and antibiotic therapy, the development of delirium in ICU was associated with a 4-fold increase in the risk of death. Our findings suggest that an important opportunity for improving the care of critically ill patients may be the determination of modifiable risk factors for delirium in the ICU setting. Numerous risk factors for delirium have been identified by logistic regression including male gender, smoking, mechanical ventilation, head trauma, and prolonged ICU stay. However, time-to-event analysis with Cox regression showed mechanical ventilation use as the only independent risk factor for delirium. In addition, according to our results, the scoring systems (APACHE IV, SOFA, and RASS) are useful for the prediction of delirium in critically ill patients.