OUTCOME OF CARE OF CRITICALLY ILL PATIENTS IN CRITICAL CARE UNITS AT ALEXANDRIA MAIN UNIVERSITY HOSPITAL

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Introduction

Critical care medicine has been defined as "a service for patients with potentially recoverable diseases who can benefit from close observation and treatment. The critical care unit (CCU) is a distinct organizational entity for clinical activity and care, operating in cooperation with other departments in a hospital. Evidence revealed that the outcome of patients in CCU is significantly related to different factors, including the severity of the disease, infrastructure, medical staff, nursing care, medical supplies, patient's age, mechanical ventilation, length of stay, complications in CCU, and spreading of antimicrobial-resistant microorganisms. Sustainable improvements in patient safety and managing risks to prevent patient harm become a top priority for health care settings globally. Improving Patient safety in a health care setting is closely related to improving quality of health care. Quality improvement in healthcare is the shared efforts of healthcare experts, patients and their relatives, payers, and organizers to improve patient outcomes.

Aim of the work

Specific objectives:
The present study was conducted to determine the outcome of care of studied critically ill patients at critical care units (five units) at Alexandria Main University Hospital (AMUH) and identify factors associated with mortality namely epidemiological factors, clinical factors, the unit of admission and hazardous events.

Patients and Methods

PATIENTS: All patients (759) admitted to the critical care units in Alexandria Main University Hospital during the study period (from April 2022 to July 2022) were included in the study.

METHODS: A Cross-sectional study was conducted to fulfill the objectives of the study. The study was conducted at the critical care units at Alexandria Main University Hospital. Records of studied patients were reviewed using a structured transfer sheet including the following data:

- Socio-demographic characteristics of patients
- Cause of admission, complete clinical data at the time of admission, duration of stay at the critical care units.
- Need and duration of mechanical ventilation.
- The outcome of care: discharge, referral or death
- All hazardous events occurred to admitted patients during the study period.

After collecting data, it was described according to the type of variables. The univariate analysis was conducted to identify factors associated with mortality at different units. Significant factors were entered a logistic regression model to identify significant predictors of mortality. Analysis was done at 5% level of significance.

Results

Table 1: Outcome of studied patients admitted at different units

Outcome of care	Total (n = 759)	
	No.	%
Outcome at critical care unit		
Non survivors	404	53.2
Survivors	355	46.8
Discharge to home	17	2.2
Discharge against advice	46	6.1
Referred to ward	292	38.5
Cause of Death	(n = 404)	
Persistent Shock State	243	60.1
Respiratory failure	51	12.6
Sudden Death	102	25.2
Death due to hazardous events	8	2.0
Endotracheal tube obstruction	7	1.7
Ventilator Disconnection	1	0.2
Hazardous events	(n = 759)	
No	606	79.8
Yes	153	20.2
VAP	107	14.1
Blood Stream Infection	46	6.1
Bed Sores	94	12.4
Sepsis	96	12.6
Complications associated with Endotracheal tube(ETT)	116	15.3
Endotracheal tube obstruction	77	10.1
Airway trauma	16	2.1
Endotracheal tube dislodgement	9	1.2
Trauma to oral cavity	14	1.8
DVT	54	7.1
UTI	31	4.1

DVT: Deep vein thrombosis , VAP: ventilator associated pneumonia, UTI: urinary tract infection , ETT :Endo tracheal tube

Table 2: Multivariate analysis for the parameters predicting mortality among critically ill patients

	#Multivariate	
	p	OR (95%C.I)
Age (years)	<0.001*	1.021* (1.010 – 1.032)
APACHE II score on admission	<0.001*	1.040* (1.024 – 1.056)
GCS on admission	<0.001*	0.871* (0.824 – 0.922)
Need for ventilation	<0.001*	73.695* (9.944 – 546.147)
Hazardous events	<0.001*	12.602* (6.603 – 24.052)

GCS: Glasgow Coma Scale

Conclusion

The majority of patients admitted to critical care units and included in the current study were elderly male patients. Medical causes were the most common causes of admission to critical care units during the study period followed by trauma and toxicological causes. Most of patients were mechanically ventilated. More than half (53.2%) of the studied patients died before discharge. The most common cause of death was persistent shock state. Unit 4 had the best outcome with the highest percentage of survivors (58.4%) as compared to the other studied units. One fifth (20.2%) of the studied critically ill patients were exposed to hazardous events. The most common hazardous events were complication associated with ETT followed by VAP and bed sores. Unit 1 showed the highest rate of exposure to hazardous events as compared to other units followed by unit 3. Significant predictors for mortality among critically ill patients were older age, mechanical ventilation, the occurrence of at least one type of hazard, high APACHE score and lower GCS.