Original Article
Eurasian Journal of Critical Care

Three Months Analysis of an Emergency Intensive Care Unit

Dilay SATILMIŞ[1], Melis DÖRTER[1], Ramazan GÜVEN[1], Başar CANDER[1]

[1]University of Health Sciences, Kanuni Sultan Süleyman Training and Research Hospital, Department of Emergency Medicine, Istanbul,Turkey

Abstract

Objective: The aim of this study was to determine the demographic characteristics of the patients followed in the Emergency Intensive Care Unit (EICU) of Kanuni Sultan Süleyman Training and Research Hospital.

Material and Method: Demographic characteristics such as age, gender and non-invasive mechanical ventilation / invasive mechanical ventilation (NIMV / IMV) requirements, mortality and morbidity rates between 24 November 2018-1March 2019 were examined retrospectively.EICU; is a 5-bed service and managed by an emergency doctor and 2 intensive care nurses for 24 hours. EICU works physically as a level 1 but functionally level 3. It is the first intensive care unit in Istanbul which is in the emergency department and managed by emergency specialists.

Results: A total of 68 patients were included in the study. Of the patients 58.8% (n = 40) were male, 41.2% (n=28) were female and 17.6% (n=12) were foreign nationals.According to the diagnosis of EICU admission, 25.0% (n=17) pneumonia, 17.6% (n=12) cerebrovascular diseases (CVH), 13.2% (n=9) acute renal failure (ARF), 11.8% (n=8) trauma 10.3% (n=7) multiple organ failure syndrome,7.4% (n=5) malignancy, 5.9% (n=4) gastrointestinal bleeding, while 2.9% (n=2) were listed as other reasons. 41.2% (n=28) of the patients were followed as intubated, 58.8% (n=40) were followed as extubated.The mean day of stay of patients in intensive care unit was 5.9 days.

Conclusion: This three-month intensive care experience showed that the rate of complications and mortality was similar to the literature and the quality of patient management was similar to the third level intensive care services.EICU's can be considered as a solution where intensive care is needed.

Keywords: Emergency intensive care unit, emergency medicine, ministry of Health, emergency medical services, mortality

Introduction

The intensive care unit is equipped with advanced technology, which is specially structured in the hospital where close follow-up and treatment of patients is performed and which provides 24 hours support every day of the week[1]. Today, intensive care units have become an integral part of modern medical education hospitals equipped with specialist doctors, nurses, technical personnel and devices[2]. The demand for intensive care beds is increasing in the world and in our country, where the rates of emergency service applications are increasing gradually. The fullness of intensive care beds leads to an increase in the number of outpatients and out-of-hospital referral rates and the waiting period of the patients in emergency services for more than 24 hours.

In order to meet these needs, the Ministry of Health of Turkey changed the communique on the principles and procedures of implementation of emergency services in inpatient health facilities on 20 February 2018 and emergency intensive care units (EICU) are planned to be followed by emergency medical specialists in emergency departments which are suitable for physical and functional conditions[3]. In accordance with the amendment to the communique, the work of the emergency intensive care unit was initiated in İstanbul Kanuni Sultan Süleyman Training and Research Hospital (KSSEAH) as of February 2018.After the approval of the Ministry of Health was taken on 8 November 2018, the first patient was hospitalized on 21 November 2018.

The EICU is a 5-bed service and is managed by an emergency doctor and 2 intensive care nurses for 24 hour which has physically first level,functionally third level intensive care unit features.It is the first intensive care unit in Istanbul which is in the emergency department and directed by emergency specialists. The aim of this study was to determine the demographic characteristics of the patients followed in the Emergency Intensive Care Unit (EICU) of Kanuni Sultan Süleyman Training and Research Hospital.

Corresponding Author: Dilay Satılmış **e-mail:** drdilay09@gmail.com
Received: 27.08.2019 • **Accepted:** 29.08.2019
Cite this article as: Satilmiş D, Dorter M, Guven R, Cander B. Three months analysis of an emergency intensive care unit. Eurasian J Critical Care. 2019;1(2):77-80

Material and Methods

The data of the patients admitted to our emergency department between 24 November 2018 and 1 March 2019 and followed-up in the EICU with the indication of intensive care unit were evaluated retrospectively from the hospital records. Of the 68 patients, 88.2% were patients with severe systemic diseases and 11.8% were trauma patients. Age, gender, nationality, emergency intensive care unit stay, hospitalization, discharge, consultation request, intubation, non-invasive mechanical ventilation / invasive mechanical ventilation (NIMV / IMV) requirement, pressure ulcers development, culture results,mortality and morbidity rates were taken into consideration.

Descriptive statistics were used to analyze the study data.Mean ± standard deviation for numerical variables and number and percentage frequency for categorical data were used in descriptive statistics.

Results

A total of 68 patients were included in the study. Of the patients 58.8% (n = 40) were male, 41.2% (n=28) were female and 17.6% (n=12) were foreign nationals. The mean age of the patients was 64.4 years.

According to the diagnosis of EICU admission, 25.0% (n=17) pneumonia, 17.6% (n=12) cerebrovascular diseases (CVH), 13.2 % (n=9) acute renal failure (ARF), 11.8% (n=8) trauma, 10.3% (n=7) multiple organ failure syndrome,7.4% (n=5) malignancy,5.9% (n=4) gastrointestinal bleeding, while 2.9% (n=2) were listed as other reasons.94.1% (n=64) consultation requests were made and 61.8% (n=42) were multiple departmental consultations.The duration of stay in the EICU was between 1 and 31 days and the median duration of stay was 5.9 days.

When the patients were examined according to their hospitalization status, it was found that 58.8 % (n = 40) of the patients were extubated and 41.2 % (n = 28) of the patients intubated.Discharged from EICU was 35.3% (n=24) referral to another center,26.5% (n=18) to service,13.2% (n=9) with health discharge,25.0% (n=17) patients died.Complications in patients who were hospitalized in the EICU and those requiring medical intervention were 73.5% (n = 50) had no complication, 25.0% (n = 17) had infection, 1.5% (n = 1) acute renal failure (ARF) developed.

In the culture study of the cultures obtained from the patients 73.5% (n=50) culture growth was not detected, 26.5% (n=18) culture growth was detected.According to the results of culture 11.8% (n=8) Candida, 8.8% (n=6) Coagulase negative Staphylococcus spp,1.5% (n=1) Klebsiella,1.5% (n=1) Pseudomonas,%1.5(n=1) E.Coli and 1.5% (n=1) E.coli + Acinetobacter + Coagulase negative Staphylcoccus spp. were identified.The low rate of cultural reproductive results can be attributed to the low rate of intubated patients with a rate of 41.2 % (n = 28)

In the large-scale prevalence studies,11.1% of the patients in intensive care unit developed pressure sores.In our EICU %2.9 (n=2) patients developed new pressure sores and %97.1 (n=66) patients did not develop pressure sores. According to our study, it was found that 57.4% (n = 39) of the hospitalized patients did not need mechanical ventilation and 42.6% (n = 29) required mechanical ventilation.

Discussion

In this study, demographic information, mortality, complications, admission complaints, diagnoses, duration of stay, bed-and-out form of emergency intensive care unit were examined with basic lines.In a study performed by Ozkan and Sahinoglu, 967 patients were examined retrospectively and 627 (64.8%) of the patients were male and 340 (35.3%) were female (4).Of the 68 patients admitted to EICU, 58.8% (n = 40) were male and 41.2% (n = 28) were female.Similar to the findings of our study, in many studies it was found that male patients had higher rates of admission in intensive care units than female patients.

Findlay et al. examined 774 patients admitted to the ICU between January 1993 and December 1994[5].They found that the duration of ICU stay in patients was between 1-68 days and the median duration of their stay in ICU was 2 days[5].In the study of Ozkan and Sahinoglu, the length of stay of 967 patients ranged between 1-77 days. The median duration of stay of the patients was 4 days (4).In our study, the duration of stay in EICU of 68 patients ranged from 1 to 31 days and the median duration of stay was 5.9 days. The reason for the average length of stay was due to the fact that the number of patients with intensive care indications increased and the duration of the referral was increased in the winter months.

Zaren and Bergström found that 47% of the 978 patients admitted to the ICU were in need of mechanical ventilation[6]. In another study, they examined 980 patients and found that those who needed mechanical ventilation in ICU admission were less likely to live than those who breathe spontaneously[7].

In a study conducted by Ozkan and Sahinoglu, 444 of the 967 patients had died and the mortality rate of the ICU was 46%[4]. In our study, the mortality rate of EICU was found to be 25%. Similarly, in our study, the rate of patients with a need for mechanical ventilation was found to be lower with a rate of 42.6%, and the mortality rate of our intensive care unit was lower than that of the patients with a low rate of mechanic ventilation.

Conclusion

This three-month intensive care experience showed that the rate of complications and mortality was similar to the liter-

ature and the quality of patient management was similar to the third level intensive care services.EICU's can be considered as a solution where intensive care is needed.

References

1. Esener Z. Clinical anesthesia, 2nd Edition, Istanbul, 1997: 696-9
2. Şahinoğlu H. Intensive care problems and treatments. 1st Edition. Ankara: Turkey Clinical Publishing House, 1992: 3-8.
3. Ministiry of Health Republic of Turkey Ankara,Turkey.Retrieved from:https://shgm.saglik.gov.tr/TR,32654/yatakli-saglik-tesislerinde-acil-servis-hizmetlerinin-uygulama-usul-ve-esaslari-hakkinda-tebligde-degisiklik-yapilmasina-dair-teblig.html
4. Ozkan F,Sahinoglu H,A retrospective analysis of the 967 patients who admitted to the Ondokuz Mayıs University Faculty of Medicine surgical intensive care unitJournal of Experimental and Clinical Medicine
5. Findlay JY, Plenderleith JL, Schroeder DR. Influence of social deprivation on intensive care outcome. Intensive Care Med. 2000 Jul;26(7):929-33.
6. Zarén B, Bergström R. Survival of intensive care patients. I: Prognostic factors from the patient's medical history. Acta Anaesthesiol Scand. 1988Feb;32(2):93-100.
7. Zarén B, Bergström R. Survival compared to the general population and changes in health status among intensive care patients. Acta Anaesthesiol Scand. 1989 Jan;33(1):6-12.