

Retrospective Evaluation of Patients Admitted to Emergency Critical Care Unit

Acil Kritik Yoğun Bakım Ünitesine Kabul Edilen Hastaların Retrospektif Değerlendirilmesi

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ABSTRACT

Background: We aim to analyze the patients hospitalized during 2016-2018 in the “emergency critical care unit” (ECCU) of our institution, which has emerged in recent years in our country and is primarily run by emergency medicine specialists operating within the department of emergency medicine and representation of a new understanding in these aspects.

Materials and Methods: Our study was carried out retrospectively on 1.658 patients hospitalized in the secondary step ECCU operating within the department of emergency medicine between 01.01.2016 and 31.12.2018. The epidemiological and medical data of the patients were obtained from the hospital registration system records. Factors affecting mortality and discharge were investigated.

Results: A total of 1.658 inpatients in the ECCU were included in our study. The median age of the patients was 71 years, and 43.8% were male. It was determined that 46.8% of the patients were discharged from ECCU, 34.3% were transferred to other services or intensive care units, and 18.9% exitus. There was no correlation between the outcome of the patients and age and gender ($p>0.05$). The highest rate of discharge was in patients hospitalized due to drug intoxication ($p<0.05$), while the highest rate of deceased patients was gastrointestinal system bleeding ($p<0.05$). Following the literature, the Apache-II score was highest in deceased patients and lowest in discharged patients ($p<0.05$). In our study, it was determined that 37% of the patients underwent various interventional procedures. A higher rate of death was found in patients who had many attempts and underwent tracheostomy and central catheterization ($p<0.05$).

Conclusion: ECCUs are managed by emergency medicine specialists who provide intensive care support, especially for critically ill patients. As we concluded in our study, many patients received the critical care they needed without waiting for the intensive care unit in the emergency room, and about half of them were discharged.

Keywords: Critical care, critically ill patient, emergency department (meSH Database)

ÖZ

Amaç: Bu çalışmada amacımız ülkemizde son yıllarda gelişme gösteren ve primer olarak acil tıp uzmanları tarafından yönetilip, acil tıp kliniği bünyesinde faaliyet gösteren ve bu yönleriyle yeni bir anlayışı ifade eden “acil kritik bakım” yoğun bakım ünitemizde (AKBÜ) 3 yıl süreyle yatırılarak tedavi edilen hastaları analiz etmektir.

Gereç ve Yöntemler: Çalışmamız 01.01.2016-31.12.2018 tarihleri arasında, acil tıp kliniği bünyesinde faaliyet gösteren, 2. basamak AKBÜ’de yatırılarak tedavi edilen 1,658 hasta üzerinde retrospektif olarak yapıldı. Hastaların epidemiyolojik ve tıbbi verileri hastane otomasyon sistemi kayıtlarından elde edildi. Mortaliteye ve taburculuğa etki eden faktörler araştırıldı.

Bulgular: Çalışmamıza AKBÜ’de yatarak tedavi edilen 1,658 hasta dahil edilmiştir. Hastaların yaş ortancası 71 yıl olup, %43,8’si erkekti. Hastaların %46,8’si AKBÜ’den taburcu edilirken, %34,3’ünün diğer servis veya yoğun bakımlara devir edildiği ve %18,9’unun ise eksitus olduğu saptandı. Hastaların sonlanımı ile yaş ve cinsiyet arasında ilişki saptanmadı ($p>0,05$). En yüksek oranda taburcu edilen hasta grubunun ilaç intoksikasyonları nedeniyle yatırılan hastalar olduğu ($p<0,05$) görülürken, en yüksek oranda eksitus olan hasta grubunu ise gastrointestinal sistem kanamaları oluşturmaktaydı ($p<0,05$). Apache-II skoru, literatür ile uyumlu olarak eksitus olanlarda en yüksek, taburcu olan hastalarda ise en düşüktü ($p<0,05$). Çalışmamızda hastaların %37’sine çeşitli girişimsel işlemler uygulandığı tespit edildi. Girişim sayısının fazla olduğu, trakeostomi ve santral katater açma işlemi uygulanan hastalarda daha fazla oranda eksitus oranı saptandı ($p<0,05$).



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Sonuç: Acil kritik bakım üniteleri, acil tıp uzmanları tarafından yönetilen, özellikle acil kritik hastaların ihtiyacı olan yoğun bakım desteğinin verildiği ünitelerdir. Çalışmamızda tespit ettiğimiz gibi çok sayıda hasta acil serviste yoğun bakım yeri beklemeden ihtiyacı olan kritik bakımı almış ve yaklaşık yarısı taburcu olmuştur.

Anahtar Kelimeler: Yoğun bakım, kritik hasta, acil servis (meSH Database)

Introduction

Critical care refers to the comprehensive medical care required for patients with life-threatening clinical conditions and illnesses, and is delivered 24 hours a day by a team of specially trained healthcare providers (1). Although most of the emergency departments (EDs) are places designed for the initial stabilization and resuscitation of the patient, they may be insufficient for advanced life support and intensive care unit (ICU) treatment (2).

This led to the emergence of the term “critical emergency medicine” in 2010, critical care has been defined as “immediate life support and resuscitation of critically ill and injured patients” and has demonstrated the necessity of emergency critical care (ECC) units (3). Of patients admitted through ED, 25% are critically ill (4). The presence of a high proportion of critically ill patients, limited hospital bed capacity, an increasing number of patients, laboratory delays, and the use of ED as the first contact for primary care prolong the length of stay in ED, causing an increase in the patient density of EDs (4,5). The establishment of critical care areas has resulted in a decrease in ED wait times, a decrease in the number of patients waiting for the ICU, and an improvement in the interventions of physicians working in the ED (6). Considering the increasing need and the benefits, emergency medicine physicians have been officially able to get an ECC sub-specialty certificate in countries such as the USA, Canada, and Japan in recent years. In fact, the term “emergency medicine” has been revised to “emergency medicine and critical care” (7). In our country, ECCUs have been increasingly widespread lately.

In our study, we retrospectively analyzed the patients we treated for 3 years in our unit, which is one of the first ECCUs established in our country. The aim of this study was to retrospectively analyze and present the patients treated in our unit, which is one of the first ECCUs established in our country. We primarily aimed to evaluate outcomes (discharge, mortality, and transfer to other clinical wards), mortality rates, length of stay, and epidemiological analysis of patients and secondarily aimed to evaluate the rates of some invasive interventions, which are important in terms of emergency medicine residency training, the follow-up of special patient groups, various special treatments, and device use.

Material and Methods

The study was approved by the Scientific Research Ethics Committee of the Ankara Training and Research Hospital with the decision numbered 425/2020 on 17/09/2020.

Study Design and Setting

Our study was retrospectively conducted with 1.658 patients admitted to the tertiary hospital ECC unit between January 1, 2016 and December 31, 2018. Our ICU provides service within the emergency medicine clinic, consisting of a total of 8 beds, this ICU has a secondary level and is managed by emergency medicine specialists and assistants.

The information of patients was obtained from the hospital automation system records and their files. Patients’ epidemiological data, diagnosis, prognostic scores, invasive interventions, mechanical ventilator requirements, specific treatments, mortality rates, length of stay, time and rates of transfer to other wards were analyzed. Factors affecting mortality, transfer time, and discharge, such as age, gender, diagnosis, the requirement for MV support, and prognostic scores were investigated.

Patients under the age of 18 years, those with unavailable digital and written files, prohibited data for any reason and without a specific diagnosis and with only symptom records (dyspnea, cough, etc.), and pregnant women were excluded from the study.

Statistical Analysis

Data were analyzed using SPSS version 22 (Chicago, IL, USA). Quantitative data were presented with median, minimum, and maximum values, while qualitative data were presented with the number of patients (n) and percentage (%). The distribution of quantitative data was checked with the Kolmogorov-Smirnov test. Kruskal-Wallis and Mann-Whitney U tests were used for the analysis of non-parametric data. Pearson chi-square test was used for the analysis of categorical variables. The correlation between two different numerical variables was analyzed with Spearman’s correlation test.

Results

A total of 1.658 patients who were hospitalized in the ECCU unit and did not meet the exclusion criteria were included in our study. The flow chart of the patients is shown in Figure 1.

The mean age of the patients was 71 years. Of the patients, 43.8% (n=726) were male and 56.2% (n=932) were female.

Of the patients, 46.8% (n=776) were discharged from the ECCU, 34.3% (n=569) were transferred to the relevant wards, and 18.9% (n=313) were followed up in the critical care unit and died.

As a result of scanning the patient files, the frequency of diagnosis according to ICD-10 and the rates of discharge, transfer and death according to the diagnoses are given in Table 1.

The three most common diagnoses of the patients included in the study were pneumonia (31.2%), drug intoxication (26.2%), and acute renal failure (ARF) (18.5%), respectively. While the patient group with the highest frequency of discharge had drug intoxication (p=0.002), the patient group with the highest mortality rate had GI bleeding (p=0.031). Ileus patients were the most frequently transferred patient group (p<0.05).

In our study, comorbidities were observed in 69.1% (n=1.145) of the patients. The most common comorbid diseases were hypertension (35%), followed by diabetes mellitus (24.1%), and coronary artery disease (15%).

In our study, Apache-II score of 1092 patients could be reached. The mean Apache-II score was 17. The Apache-II score of the deceased patients was compared with that of the transferred and discharged patients, which revealed

a significantly higher Apache-II score in the transferred patients compared to the discharged patients (p<0.001) (Table 2). In addition, a positive correlation was found between the length of hospital stay and Apache-II score (r=0.246, p<0.001).

Of the patients, 37% (n=613) underwent interventional procedures. The most frequently performed interventional procedures were central venous catheterization (CVC) with 33.4% (n=554), endoscopy with 3.3% (n=54), and lumbar puncture with 1.6% (n=26). The frequency of intervention, tracheostomy, CVC, and colonoscopy was higher in those who died (p<0.05) (Table 3).

Of the patients, 38.32% (n=635) received mechanical ventilator support (117 patients received only non-invasive, 429 patients received only invasive, and 89 patients received both invasive and non-invasive). MV support and invasive MV support were significantly higher in deceased patients (Table 4) (p<0.05).

Of the patients included in our study, 55.9% (n=927) received antibiotic therapy, 26.7% (n=443) received inotropic support, 7.7% (n=128) underwent dialysis, 1.3% (n=22) received thrombolytics, 1.3% (n=20) underwent coronary angiography, 0.4% (n=6) were treated with intravenous lipid, and 0.2% (n=3) received hypothermia treatment. The deceased patients had higher frequencies of inotropic support, antibiotic therapy, dialysis, and coronary angiography, the discharged patients had a significantly higher frequency of lipid administration, and the transferred patients had a significantly higher frequency of thrombolytic administration (p<0.05). There was no correlation between hypothermia and outcomes (p>0.05) (Table 4).

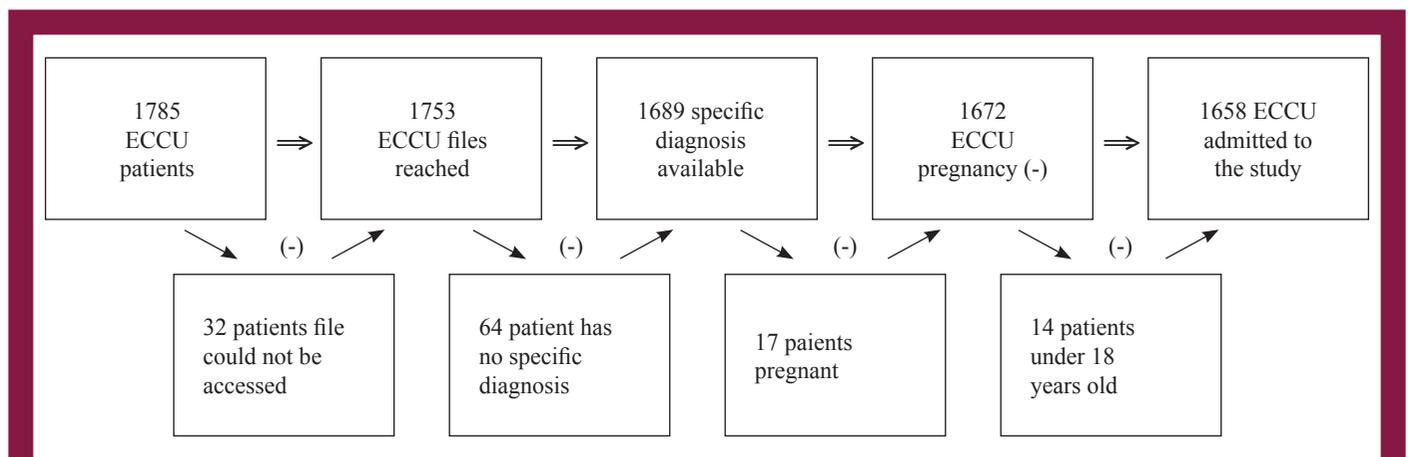


Figure 1. Patient flow chart
 ECCU: Emergency critical care unit

Discussion

Due to the increase in the number of patients who require intensive care monitoring, the number of ICU beds is insufficient, and the number of patients waiting for admission to the ED is increasing, leading to problems in ICU flow (8,9). Rapid identification of patients requiring critical care and their admission to ECCUs is important both to prevent the density in the ED and to improve the

therapeutic services received by the patient. There are studies showing the significant positive effect of admission of critically ill patients to the ICU within the first 72 hours on the survival of the patient (10).

Data from the United States show that the average age of patients requiring ICU admission has increased over the years (11). The reason for this is related to the prolonged average life expectancy all over the world. The increase in the number of comorbidities with increasing age increases the requirement for ICU. In our study, the mean

Table 1. Correlation between patient diagnosis and outcome

| Diagnosis | Total (n=1.658) | Exitus (n=313) | Discharge (n=776) | Transfer (n=569) | p |
|-----------------------------|-----------------|----------------|-------------------|------------------|-------|
| Pneumonia | 518 (31.2) | 90 (28.8) | 234 (30.2) | 194 (34.1) | 0.175 |
| Drug intoxication | 435 (26.2) | 75 (24) | 235 (30.3) | 125 (22) | 0.002 |
| Acute renal failure | 307 (18.5) | 55 (17.6) | 142 (18.3) | 110 (19.3) | 0.794 |
| Sepsis | 305 (18.4) | 56 (17.9) | 130 (16.8) | 119 (20.9) | 0.146 |
| Respiratory failure | 207 (12.5) | 34 (10.9) | 92 (11.9) | 81 (14.2) | 0.268 |
| Urinary tract infection | 205 (12.4) | 29 (9.3) | 92 (11.9) | 84 (14.8) | 0.050 |
| Ischemic stroke | 199 (12) | 39 (12.5) | 97 (12.5) | 63 (11.1) | 0.701 |
| Post CPR patient | 113 (6.8) | 21 (6.7) | 48 (6.2) | 44 (7.7) | 0.537 |
| Decompensated heart failure | 92 (5.5) | 19 (6.1) | 40 (5.2) | 33 (5.8) | 0.794 |
| Hemorrhagic stroke | 83 (5) | 13 (4.2) | 49 (6.3) | 21 (3.7) | 0.069 |
| GI bleeding | 69 (4.2) | 20 (6.4) | 23 (3) | 26 (4.6) | 0.031 |
| Diabetic ketoacidosis | 53 (3.2) | 12 (3.8) | 30 (3.9) | 11 (1.9) | 0.107 |
| Acute coronary syndrome | 44 (2.7) | 10 (3.2) | 21 (2.7) | 13 (2.3) | 0.718 |
| Pulmonary embolism | 42 (2.5) | 9 (2.9) | 14 (1.8) | 19 (3.3) | 0.191 |
| DIC | 22 (1.3) | 5 (1.6) | 13 (1.7) | 4 (0.7) | 0.274 |
| Status epilepticus | 18 (1.1) | 7 (2.2) | 6 (0.8) | 5 (0.9) | 0.091 |
| Anaphylaxis | 15 (0.9) | 3 (1) | 4 (0.5) | 8 (1.4) | 0.233 |
| CNS infection | 12 (0.7) | 2 (0.6) | 3 (0.4) | 7 (1.2) | 0.193 |
| CO intoxication | 12 (0.7) | 3 (1) | 3 (0.4) | 6 (1.1) | 0.311 |
| Pneumothorax | 11 (0.7) | 4 (1.3) | 5 (0.6) | 2 (0.4) | 0.267 |
| Ileus | 11 (0.7) | 0 (0) | 3 (0.4) | 8 (1.4) | 0.021 |
| Cholangitis | 9 (0.5) | 3 (1) | 4 (0.5) | 2 (0.4) | 0.497 |
| Alcohol intoxication | 8 (0.5) | 2 (0.6) | 3 (0.4) | 3 (0.5) | 0.847 |
| Other | 230 (13.9) | 44 (14.1) | 105 (13.5) | 81 (14.2) | 0.929 |

CPR: Cardiopulmonary resuscitation, DIC: Disseminated intravascular coagulation, CNS: Central nervous system, CO: Carbon monoxide. Pearson chi-square test

Table 2. Comparison between patient outcomes and Apache II score

| | Total (n=1.092) Median (min-max) | Exitus (n=198) Median (min-max) | Discharge (n=496) Median (min-max) | Transfer (n=398) Median (min-max) | p |
|-----------------|--|---------------------------------------|--|---|-------|
| Apache II score | 17 (0-55) | 29 (12-55) | 8 (0-42) | 18 (1-45) | 0.727 |



age of the admitted patients was 71 years, and more than half of the patients had comorbid diseases. Moreover, it is more difficult for patients who are elderly, have a high number of comorbidities and require management by many departments to be admitted by branch intensive care units. These patient groups are usually admitted to the ECCU.

Patients are admitted to the ICU from the emergency department with many diagnoses. Simchen et al. (10) reported in their study that the most common reasons for hospitalization of patients were pulmonary, cardiac and neurological diseases. In addition to these, the authors stated that the diagnoses of shock and sepsis are also common (10).

Another study reported that the most common diagnoses for patients admitted to critical care as septic shock, cardiac system pathologies, and GI bleeding (12). Our study demonstrated that the most frequently hospitalized patients were admitted with infection, primarily pneumonia, followed by drug intoxications and renal failure. We are of the opinion that sepsis and infection are more common in elderly patients due to the increase in the catabolic process over time, comorbid diseases, and immune suppression due to these diseases. Furthermore, we believe that the frequency of ARF is high in this patient group due to organ failure.

In our country, drug intoxications are not among the specific patient groups of any clinic and carry medico-legal risks. This situation and the fact that this patient group often involves multiple disciplines for hospitalization may

have ranked second among the patient group hospitalized in our hospital, as in many hospitals.

Acute intoxications constitute a significant proportion of patients admitted to the ICU, with a low overall mortality rate. However, they often require ICU monitoring (13). While the mortality rate due to intoxication is 1% in developed countries, it is 3-5% in developing countries (14). Our study showed a high discharge rate for patients who were admitted to the ECC unit due to drug intoxication. The department of admission for patients who present to the emergency department with drug intoxication and the avoidance of the relevant branches to treat these patients on an inpatient basis, in terms of medico-legal risks, poison counseling centers recommending intensive care admission to all patients, including minor poisonings, and at least 24-hour monitoring can put physicians in difficulties. For this reason, patients presenting with intoxication are followed up by emergency physicians to reduce the density of the emergency department in facilities with ECCU and to intervene early. We believe that the discharge rates of these patients are high because of the benign clinical picture, their early admission, early intervention, and the fact that the emergency physicians who will manage the ECCU have sufficient knowledge and are experienced in this regard.

A “before-after” study in which the ECC unit was added to the emergency department workflow evaluated 350,000 emergency room patients for approximately three years and showed that ACBU statistically significantly reduced 30-day mortality for all patients (2.1% vs. 1.8%; odds ratio

Table 3. Comparison between interventional procedures and outcomes

| | Total (n=1.658) | Exitus (n=313) | Discharge (n=776) | Transfer (n=569) | p |
|--------------------------------|--------------------|-------------------|----------------------|---------------------|--------|
| Intervention | 613 (37) | 238 (76) | 135 (17.4) | 240 (42.2) | <0.001 |
| Central catheterization | 554 (33.4) | 237 (75.7) | 100 (12.9) | 217 (38.1) | <0.001 |
| Endoscopy | 54 (3.3) | 5 (1.6) | 32 (4.1) | 17 (3) | 0.095 |
| Lumbar puncture | 26 (1.6) | 9 (2.9) | 5 (0.6) | 12 (2.1) | 0.012 |
| Tracheostomy | 22 (1.3) | 10 (3.2) | 1 (0.1) | 11 (1.9) | <0.001 |
| Colonoscopy | 15 (0.9) | 7 (2.2) | 2 (0.3) | 6 (1.1) | 0.007 |
| Tube thoracostomy | 6 (0.4) | 3 (1) | 2 (0.3) | 1 (0.2) | 0.144 |
| Thoracentesis | 6 (0.4) | 2 (0.6) | 1 (0.1) | 3 (0.5) | 0.322 |
| Other | 4 (0.2) | 3 (1) | 0 (0) | 1 (0.2) | 0.013 |

Table 4. Comparison between mechanical ventilator use and outcomes

| | Total (n=1.658) | Exitus (n=313) | Discharge (n=776) | Transfer (n=569) | p |
|-------------------|--------------------|-------------------|----------------------|---------------------|--------|
| MV support | 635 (38.3) | 308 (98.4) | 112 (14.4) | 215 (37.8) | <0.001 |
| NIMV | 206 (12.4) | 44 (14.1) | 88 (11.3) | 74 (813) | <0.410 |
| IMV | 518 (31.2) | 302 (96.5) | 43 (5.5) | 173 (30.4) | <0.001 |

0.85; 95% confidence interval 0.8-0.9) (15). The authors recommend adopting ECCU-level medical care for all EDs to improve outcomes for critically ill patients (15). In a study conducted with approximately 15,000 emergency room patients from the Netherlands, it was reported that in-hospital mortality increased significantly when the transfer from the ED to the ICU was prolonged (after approximately 2.5 hours) (16). These studies demonstrate that the quality of ED medical care and patient prognosis will improve in the presence of an ECCU within the ED, if close and possible. One of our country's first and most successful examples of ECCU is the critical care unit within our emergency medical clinic. The number of ECCUs managed entirely by emergency medicine professionals in our country is limited to a few examples. In our opinion, an increase in this number will significantly contribute to the functioning of ED and the quality of patient care, as we mentioned above.

In their study, Chalfin et al. (17) reported that the mortality rate was 12.9% for patients who remained in the critical care unit for less than 6 hours, and 17.4% for those who stayed longer. Bhat et al. (18) reported that 10 of 169 patients intubated in the critical care unit died. Studies have reported that the mortality rate is higher in patients with sepsis and respiratory failure in critical care (19,20). In our study, the overall mortality rate was 18.9%, which is consistent with the literature. It was found that the mortality rate of patients with drug intoxications was very low and a high proportion of them was discharged, and the mortality rate of patients with GI bleeding was high.

Apache-II is a scoring system used to determine the severity of the disease, especially in advanced ICUs (21). The results of the literature review show that an Apache-II score above 25 indicates increased mortality (21,22). In their study, Uysal et al. (23) reported that the mortality rate was 98% in patients with an Apache-II score of 20-24. In our study, the Apache-II score was highest in deceased patients and lowest in discharged patients, in line with the literature. A positive correlation was found between the Apache-II score and length of stay.

Invasive interventions are an important part of patient care in intensive care and critical care units. These interventions include CVC insertion, arterial access establishment, MV ligation, and tracheostomy. The study of Çanakçı et al. (24) reported that 91.66% of patients who underwent tracheostomy died. A study by Dur et al. (25) indicated that tracheostomy was performed in 6.1% of patients and 62.5% of these patients died. Our study showed that 22 (1.3%) patients underwent tracheostomy and 10 of these patients died. A lower number of tracheostomy procedures can be attributed to the shorter length of stay

of the patients in the ECC care unit and therefore their shorter monitoring times with the mechanical ventilator.

Given the literature, the overall mortality rate in ICUs and critical care units is high despite all the advancements in the field of medicine (17,18). A study conducted in the United States reported an ICU mortality rate of 12% (26). Studies conducted in tertiary ICUs in our country have reported an ICU mortality rate ranging between 38-43% (23,24,25). Uysal et al. (23) attributed the higher-than-expected ICU mortality rate to the long ED wait times and the admission of patients who would not benefit from the ICU (23). In their study, Gunnerson et al. (15) reported that the mortality rate for patient groups before and after critical care was similar, but the mortality rate was decreased depending on risk (27). In our study, the follow-up of 313 (18.9%) patients in the critical care unit resulted in death. Our mortality rate was found to be similar to the rates reported in the general literature.

We believe that the ICU follow-up time was completed in this area since the area used for critical care in our study was also the ICU allocated to the ED and bed shortage was less in this area, and the follow-up time was prolonged due to the fact that the transferred patients were waiting for empty beds in the relevant wards. Moreover, we are of the opinion that the reason for the long follow-up time of patients with high Apache-II scores and mortality was that patients who required palliative care and who would not benefit from ICU were admitted to critical care instead of staying in the ED. In the light of these data, it is understood more clearly how ECC has filled an important gap and the positive contribution of its presence to the prognosis of patients.

Study Limitations

The major limitation of our study is its single-center design. If it had been conducted in many different ECCUs, different results could have been achieved. For example, in our patient group, the patients with drug intoxication had the highest frequency of discharge, while those with GI bleeding had the highest mortality. We think that this might have been different if the study had included different centers. This may also apply to other parameters. Another important limitation is that the ECCU also works as an ICU. We are of the opinion that having to work in ICU affects many parameters such as the length of stay and mortality rate of the patients. Moreover, another important point is that we could not access the Apache-II scores of all our patients. This was due to some problems in the automation system and file records, and is due to the retrospective character of the study.

Conclusion

In this study, we tried to examine a successful example of ECCUs with 3 years of patient experience, which have recently started to develop in our country. In conclusion, there is no relationship between patients' age, gender, comorbidities and mortality. We found that the patient group with the highest frequency of discharge was those with drug intoxication and the patient group with the highest mortality rate was those with GI bleeding. In our study, the Apache-II score was highest in deceased patients and lowest in discharged patients, which is in line with the literature. Positive inotropic support, antibiotic therapy, hemodialysis, and interventional procedures and treatments are higher in deceased patients.

ECCUs can ensure that many patients receive the critical care they need without waiting for an ICU in the ED, and they can make positive contributions to their prognosis. In addition, due to the inpatient profile and often the need for invasive interventions, procedures, and treatments, it can significantly contribute to the emergency medicine research assistants for our country's core emergency medicine curriculum. The spread of ECC units in our country, as in the world, in the future, may provide significant opportunities for both critical patients and emergency medicine physicians.

Ethics

Ethics Committee Approval: The study was approved by the Scientific Research Ethics Committee of the Ankara Training and Research Hospital with the decision numbered 425/2020 on 17/09/2020.

Informed Consent: Retrospective study.

Peer-review: Internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: D.Ü.K., Y.K.G., Concept: İ.S.A., D.Ü.K., Design: İ.S.A., D.Ü.K., Y.K.G., Data Collection or Processing: D.Ü.K., Y.K.G., Analysis or Interpretation: İ.S.A., Y.K.G., Literature Search: İ.S.A., D.Ü.K., Y.K.G., Writing: D.Ü.K.

Conflict of Interest: No conflict of interest was declared by the authors.

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