Factors Affecting the Length of Stay of Patients in Emergency Department Observation Units at Teaching and Research Hospitals in Turkey

Türkiye'de Bir Eğitim Araştırma Hastanesi Acil Servisinin Monitörize Birimindeki Hastaların Kalış Sürelerini Etkileyen Faktörler

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SUMMARY

Objectives

This study aimed to determine the reasons for long stays in monitoring units and to propose a solution.

Methods

The patients who were followed in monitoring units of emergency service and the factors affecting the length of their hospital stay were analyzed retrospectively. Demographic features, their initial complaint that lead to monitoring, diagnosis, their means of arrival to emergency service, their admittance date and hour, medical history, basic vital signs, length of stay in emergency service, invasive interventions, intubation, mortality rates, consultations, and clinical results were evaluated.

Results

The study included 603 patients. Average emergency service stay in monitoring unit was found to be 6.5 hours. In addition, 15 patients (2.5%) stayed 24 hours or longer, and 78 patients (12.9%) stayed 12 to 24 hours. Of the 15 patients who stayed in emergency service for 24 hours or more, 8 (53.3%) stayed because there wasn't enough space in intensive care units. The most prevalent complaint for admission to the emergency service was chest pain (25.5%), followed by dyspnea (21.9%) and tachycardia (11.6%).

Conclusions

For real emergency conditions, monitoring units are necessary to follow patients closely and to perform immediate interventions. The fullness of the intensive care units primarily affects the emergency service and leads to long stays in emergency service as patients are waiting to be admitted to the intensive care unit. As the number of consultations increases, the monitoring period is prolonged.

Key words: Emergency service; intensive care unit; monitorized observation unit.

ÖZET

Amaç

Çalışmamız monitörlü gözlem birimde hastaların uzun kalış nedenlerinin belirlenip bunlara yönelik çözümler üretilmesi gerekliliğini amaçlamıştır.

Gereç ve Yöntem

Acil Tıp Kliniği'ne başvurup monitörlü gözlem biriminde takip edilmiş olan hastalar ve bu hastaların kalış süreleri üzerine etkili faktörler geriye dönük incelendi. Bu hastaların demografik özellikleri, hangi şikayetlerle monitörlü gözleme alındıkları, aldıkları tanılar, acil servise nasıl getirildikleri, acil servise başvuru tarih ve saatleri, özgeçmişleri, geliş vital bulguları, acil serviste kalış süreleri, uygulanan invaziv girişimler, entübe edilip-edilmedikleri, mortalite durumları, konsültasyonlar ve klinik sonlanımları incelendi.

Bulgular

Çalışmaya 603 hasta alındı. Çalışmamızda monitörlü gözlemde takip edilen hastaların acil serviste ortalama kalış süresi 6.5 saat olarak bulundu. Ayrıca 15 hastanın (%2.5) 24 saat ve üzeri, 78 hastanın (%12.9) 12-24 saat aralığında acil serviste kaldığı görüldü. 24 saat ve üzeri acil serviste kalan 15 hastanın sekizinin (%53.3) kalış sebebi yoğun bakımlarda yer bulunmaması idi. Çalışmamızdaki hastaların acile başvuru şikayetleri incelendiğinde göğüs ağrısı (%25.5) en sık şikayet olurken, bunu nefes darlığı (%21.9) ve çarpıntı (%11.6) şikayetleri izledi.

Sonuç

Acil servislere başvuran hastalar içinde çok acil tanımına uyan hastaların hemen ilk müdahalesinin yapılıp, yakından izlenebileceği monitörlü gözlem birimlerinin oluşturulup geliştirilmesi gerekmektedir. Yoğun bakımlarda yer olmaması durumunun acil servisleri primer düzeyde etkilediği ve yatış için yoğun bakımlarda yer bekleyen hastaların acil servislerde uzun kalışlarının nedeni olduğu sonucuna ulaşılmıştır. Konsülte edilen birim sayısı arttıkça hastanın monitörlü gözlemde kalış süresi uzamaktadır.

Anahtar sözcükler: *Acil servis; monitörlü gözlem birimi; yoğun bakım.*

Introduction

Emergency departments must provide continuous healthcare services for 365 days a year and 24 hours a day for patients requiring urgent treatment. Following life-saving intervention in the emergency department, patients with serious conditions are admitted to the hospital and will continue treatment within a specialist department. Increased workload in the emergency department contributes to delays in treatment and the accumulation of patients, limiting the services that can be provided and the quality of these services; subsequently, declines in overall productivity may be expected.[1] These challenges may contribute to overall patient safety and satisfaction, as well as workplace psychology among care providers.[2-4]

Factors contributing to increased patient volume within the emergency department include limited physical space, availability of bed space in the intensive care unit, increasing proportions of geriatric individuals in the general population, personnel shortages, delayed consultation with specialists, and delays in imaging and laboratory services.[4-6] Critical patients are followed closely within monitored observation units in the emergency department. Accumulation of patients in these specialized units can negatively impact the efficiency of the entire emergency department. In the present study, we investigated the factors that influence the length of stay within these monitored observation units.

Materials and Methods

The study was conducted in the emergency department of the Bozyaka Research And Education Hospital hospital between 16.08.2011 and 16.09.2011. This emergency department uses a five-level triage system, with all patients who are classified in the first four levels treated in the monitored observation unit. The study protocol was reviewed and approved by the local education planning board. The study group included patients treated in the monitored observation unit during the study period. The study data were obtained retrospectively from the hospital's digital information management system (Probel) and from physical records maintained within the emergency department.

Demographic data collected for the study included the means of arrival at the emergency department, times and dates of arrival, medical history, symptoms, vital signs upon arrival, length of stay within the emergency department, diagnoses, applied invasive procedures, use of dialysis, intubation status, mortality, medical consultations, use of imaging modalities such as CT (computed tomography) or MR (magnetic resonance), and clinical outcomes. MINDRAY PM-9000 monitors located in the monitored observation units were used for regular monitoring of clinical parameters. The

Mortara Instrument ELI 250 was used for ECG (electrocardiogram) scans. Computed tomography images were captured using a Toshiba Asteio and Toshiba Aquilion 64 multislice device. A Philips Achieva device was used for magnetic resonance imaging, a Digi Prince DP-9900 was used for ultrasound imaging, and the Dynamic X-ray device was used in chest radiography.

All statistical analyses were performed using SPSS (Statistical Package for Social Sciences) for Windows 15.0 software. The Student's t-test and one-way ANOVA (advanced analysis of binary comparisons, Bonferroni) were used for comparing the parameters between the groups when evaluating the descriptive statistics (mean, standard deviation) and quantitative data. Qualitative, categorical data was evaluated using the Chi-Square test and Fisher's Exact Chi-square test. Results were evaluated at 95% confidence interval and p <0.05 was established as the threshold of statistical significance.

Results

A total of 18,162 patients were admitted to the emergency department during the study period. Out of this population, 603 patients (3.3%) treated in the monitored observation unit. Male patients accounted for 54.7% (n=330) of the study group. Patients were subdivided into 8 groups according to their age (<18, 18-24, 25-34, 35-44, 45-54, 55-64, 65-74 and >75 years). The group with patients aged 75 years or greater constituted the largest proportion of the total study population (29.5% n=178). In addition, 52.4% (n=316) of the monitored patients were at least 65 years old. Chest pain was the most common complaint, reported by 154 patients (25.5%), followed by shortness of breath (21.9%, 132 patients), and heart palpitations (11.6%, 70 patients).

After evaluating the time of admission in the study group, the fewest admissions and discharges occurred between the hours of 05:00 and 06:00, while the largest number of admissions and discharges occurred between hours of 22:00 and 23:00. The highest rate of admission to the monitored observation unit (253 patients, 43.6%) was between the hours of 16:00 and 00:00, which was approximately twice the number of patients admitted between the hours of 00:00 to 08:00 (n=118). Furthermore, the number of discharged patients was the greatest (42.1%) between 16:00 and 00:00. Only 15 patients (2.5%) remained in the monitored observation unit for more than 24 hours. There was no statistically significant relationship between the arrival times and the mean length of stay in the emergency department (p=0.303) (Table 1).

Among the 15 patients remaining in the monitored observation unit for more than 24 hours, lack of space in the intensive care unit (n=8, 53.3%), lack of space in the emergency department (n=1, 6.7%), absence of a consulting physician