

Analysis of Cases Referred from A Tertiary University Hospital Emergency Service: The Case of Ordu Province

Seyda Tuba Savrun¹(ID), Atakan Savrun¹(ID)

¹Ordu University, Faculty of Medicine, Department of Emergency Medicine, Ordu, Turkey

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Abstract

Objective: University hospitals are health institutions that have sufficient and equipped personnel for diseases that require advanced examination and special treatment, contain high technology and/or have an infrastructure or are expected to provide education-research services. In some cases of medical necessity, patients can be transferred from tertiary hospitals to both the same level and lower-level health institutions, and in some cases even to other centers outside the province where the patient is located. In this direction, it was aimed to retrospectively analyze the data of the cases referred to other centers from a tertiary hospital emergency department and to determine the deficiencies.

Methods: Archive records of 133 cases who were referred to other health centers from Ordu University Medical Faculty Training and Research Hospital's emergency service between 01.06.2022 and 31.08.2022 were examined. The demographic characteristics of the cases, referral diagnoses, referral branches, reasons for referral, types of hospitals, the relationship between referral branches and the type of hospital referred were examined as the campuses of referral centers.

Results: The most common reason for transferring the cases was the lack of an intensive care unit (57.1%), while the second most common reason was the absence of a patient service bed (23.3%). The most frequently referred patients were cardiology patients (20.3%) and the reason was not intensive care unit (88.9%), followed by chest diseases patients (19.5%) and no intensive care unit (61.5%). It was determined that 67% of cardiology patients were referred to a private hospital, 33% to a secondary level hospital, and 11.1% to another province.

Conclusion: Tertiary hospitals are expected to be more equipped centers than other hospitals in terms of technical, personnel, patient service, intensive care, and many other aspects. Only the quality of equipment and personnel is not sufficient in such centers. Patient beds and intensive care units are very important factors that should not be ignored.

Keywords: Emergency medicine, Tertiary University Hospital, interhospital referral, lack of intensive care.

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Address for correspondence/reprints:

Name and Surname: Atakan Savrun

Telephone number: +90 (544) 264 70 70

E-mail: atakan4601@hotmail.com

INTRODUCTION

University hospitals are health institutions that have sufficient and equipped personnel for diseases that require advanced examination and special treatment, contain high technology, and/or have an infrastructure or are expected to provide education-research services. In this direction, university hospitals are centers that accept patients from other health institutions and from the scene, especially from primary and secondary hospital emergency services. However, in some cases of medical necessity, patients can be transferred from tertiary hospitals to both the same level and lower level health institutions, and in some cases even to other centers outside the province where the patient is located (1,2).

With the "Emergency Health Services Regulation", which was first published in our country in 2000, the rules to be followed in patient referrals from emergency services to other hospitals were determined, and the reasons for these referrals and the rules to be followed were determined. According to these determined rules, it has been stated that after the first medical intervention, advanced medicine will be done for different reasons such as insufficiency of existing medical-technical facilities, the inadequacy of advanced examination and treatment, and lack of treatment beds or branches to treat (3).

In the light of the source information reached; There are many studies on patient

referral from primary and secondary healthcare institutions to tertiary healthcare institutions. However, it has been observed that there are not enough studies on patient referrals from the tertiary hospital emergency department to other health centers. In this direction, it was aimed to retrospectively analyze the data of the cases referred to other centers from a tertiary hospital emergency department and to determine the deficiencies.

METHODS

The presented study is a cross-sectional and retrospective study. Archival records of 133 cases who were referred to other health centers between 01.06.2022 and 31.08.2022 from the emergency department of Ordu University Medical Faculty Training and Research Hospital, with an average annual number of emergency service admissions of approximately 180,000, were examined. Demographic characteristics of the cases, referral diagnoses, referral branches, reasons for referral (lack of patient rooms, need for intensive care rooms, lack of related industry, advanced examination treatment) hospital types (2nd level state hospital, private hospital, and university hospital), the relationship between the referral branches and the type of hospital referred, was examined as the campuses of the referral centers (intra-provincial centers, out-of-province centers).

Inclusion criteria:

Cases who were referred to another center from the Emergency Service of Ordu University Faculty of Medicine Education and Research Hospital between 01.06.2022 and 31.08.2022 in accordance with the "Emergency Health Services Regulation" and whose information can be accessed will be included in the study.

Exclusion criteria:

Cases without love in line with the "Emergency Health Services Regulation" Cases outside the specified date range Cases with inaccessible or missing information will be excluded from the study.

Statistical Analysis

It was done using a package program called SPSS (IBM SPSS Statistics 28). Frequency analysis was performed to interpret the

findings. Chi-square test was used for statistical analysis. Data were presented as mean \pm standard deviation (SD). In our present study, a p-value less than 0.05 was considered statistically significant.

RESULTS

133 cases meeting the necessary criteria were included in the study. It was determined that 48.1% (n=64) of the patients were male and 51.9% (n=59) were female. The age range of the cases was determined as minimum 5/year, maximum 98/year, and mean age 64.86 ± 18.90 /year. The branches that referred from the emergency department and the distribution according to the reasons for the referral according to the branches are summarized in Table 1.

Table 1. Relation of referrals from the emergency department with their fields of expertise

Department	Lack of patien room		Need for intensive care		Lack of related industry		Advanced examination treatment		Total	
	n	%	n	%	n	%	n	%	n	%
Chest Diseases	3	11,5	16	61.5	7	26.9	0	0	26	19.5
İnternal Medicine	6	24	16	64	3	12	0	0	25	18.8
Neurology	3	21.4	9	64.3	2	14.3	0	0	14	10.5
Cardiology	3	11.1	24	88.9	0	0	0	0	27	20.3
General Surgery	5	62.5	2	25	0	0	1	12.5	8	6
Thoracic Surgery	3	33.3	0	0	6	66.3	0	0	9	6.8
Gastroenterology	5	62.5	3	37.5	0	0	0	0	8	6
Anesthesia And Reanimation	1	12.5	6	75	1	12.5	0	0	8	6
Plastic Reconstructive Surgery	0	0	0	0	3	100	0	0	3	2.3
Psychiatry	0	0	0	00	1	100	0	0	1	0.8
Dermatology	0	0	0	0	1	100	0	0	1	0.8
Orthopedic Surgery	2	100	0	0	0	0	0	0	2	1.5
Urology	0	0	0	0	1	100	0	0	1	0.8

When the reasons for the referred patients are examined; patient rooms were 23.3% (n=31), need for intensive care rooms, was 57.1% (n=76), lack of related industry 18.8% (n=25), advanced examination treatment 0.8%(n=1). When the types of hospitals referred are examined; Private hospitals 45.1% (n=60), secondary level state hospitals 51.9% (n=69), and university hospitals 3% (n=4). The distribution of the cases referred from the

emergency department by branch-based health center types is summarized in Table 2. When the campuses of the referral centers were examined, it was found that intra-provincial referral was 88.7% (n=118), and extra-provincial referral was 11.3% (n=15).

The distribution of the patients referred from the emergency department according to the branches between provinces is summarized in Table 3.

Table 2. Distribution of the cases referred from the emergency department according to the fields of expertise and health center types

Department	Private Hospital (n)	Public Hospital (n)	University Hospital (n)	Total (%)
Chest Diseases	13	13	0	19
İnternal Medicine	11	13	1	18.8
Neurology	8	6	0	10.5
Cardiology	17	10	0	20.3
General Surgery	2	5	1	6
Thoracic Surgery	0	9	0	6.8
Gastroenterology	3	5	0	6
Anesthesia And Reanimation	5	3	0	6
Plastic Reconstructive Surgery	0	2	1	2.3
Psychiatry	0	0	1	0.8
Dermatology	0	1	0	0.8
Orthopedic Surgery	0	2	0	1.5
Urology	1	0	0	0.8

Table 3. Inter-provincial referral distribution of patients referred from the emergency department according to fields of expertise

Department	City				Total	
	İn		Out		n	%
	n	%	n	%		
Chest Diseases	26	100	0	0	26	19.5
İnternal Medicine	20	80	5	20	25	18.8
Neurology	12	85.7	2	14.3	14	10.5
Cardiology	24	88.9	3	11.1	27	20.3
General Surgery	7	87.5	1	12.5	8	6
Thoracic Surgery	9	100	0	0	9	6.8
Gastroenterology	7	87.5	1	12.5	8	6
Anesthesia And Reanimation	7	87.5	1	12.5	8	6
Plastic Reconstructive Surgery	2	66.7	1	33.3	3	2.3
Psychiatry	0	0	1	100	1	0.8
Dermatology	1	100	0	0	1	0.8
Orthopedic Surgery	2	100	0	0	2	1.5
Urology	1	100	0	0	1	0.8

DISCUSSION

Health institutions that provide outpatient or inpatient health services to the sick and injured are called hospitals. Hospitals are divided into classes among themselves. Many different criteria are used in the classification of hospitals, such as ownership, educational status, size, location, and type of hospital services (4). However, in our country, classification is made according to who owns the most hospitals (Ministry of Health, universities, private institutions, municipalities, foundations, associations, hospitals belonging to foreigners and minorities), the type and quality of the service provided (5). According to the type and quality of the service provided by the hospitals, they are defined as primary, secondary and tertiary hospitals. The centers where the treatment is done with simple methods and fast and do not need advanced technological equipment are primary care hospitals. Secondary care hospitals are centers where primary care hospitals are inadequate and need more advanced technological equipment for longer-lasting diagnosis and treatment of diseases. Tertiary hospitals, on the other hand, are developed hospitals such as training-research hospitals and university hospitals, which are much more complex, more difficult to diagnose, have advanced technology, have high bed capacity, and are the most advanced center in their region (6). As it is known, tertiary care hospitals are mostly the

last centers that accept patients. In the data of a center in the literature, it has been reported that 61% of interhospital referrals are made to tertiary hospitals (7). In a study conducted in another center, it was reported that two-thirds of referrals were made to university hospitals in a similar way (8). It has been reported in the literature that referrals are mostly made to tertiary care centers and that tertiary care centers are mostly referral hospitals rather than referrals (9). However, in some cases, patients are referred from tertiary centers to other health institutions. In the present study, patients referred to other centers from Ordu University Training and Research Hospital, which is a tertiary hospital, were examined. When the reasons for transferring the cases were investigated, the most common reason was the lack of an intensive care unit in the university hospital (57.1%), while the second most common reason was the absence of a patient service bed (23.3%). In the literature, Kilic et al. reported that "insufficiency of medical equipment and lack of a relevant department (71.5%) were the most common causes in a study conducted in a secondary hospital. In another study, when the reasons for the patients referred from the secondary level hospital were examined, it was reported that the most common reason was the lack of intensive care space (77.1%) in the center that referred the patient (10). Similarly, it has been reported in the literature that patients who were decided to

be admitted to the intensive care unit were referred to another center (84.9%) due to the lack of room in the intensive care unit and that the intensive care unit was not sufficient (11). According to the source information obtained, the most common reason for referral between hospitals is the absence of an intensive care unit. However, the cases were mostly referred to tertiary centers from less equipped centers. In the present study, the status and reasons for patient referral from tertiary care to other centers were investigated. Although the center where the study was conducted was the tertiary level, the most common reason for the cases referred was the lack of an intensive care unit (57.1%), and the second most common reason was the absence of a patient service bed (23.3%). Among the reasons for this situation are the aging of the society, the increase in comorbid diseases, the increase in intensive care indications and the easier indication of intensive care due to fear of malpractice. However, the most important problem in the center presented; The main building has a very limited number of service beds (n=113) and the intensive care unit (n=30). For these reasons, we think that these problems will decrease and referrals will be minimized, with the third step city hospital under construction in Ordu province.

In the source information reached, different results have been reached regarding the clinical diagnosis of the cases with interhospital

transplants. There are studies reporting that the most common reason for referral is cardiological problems (12,13). However, there are also studies reporting that the most common reason for referral is trauma (14,15,16). In their study, Güler et al. reported that patients were referred mostly for cardiac reasons (12), and in the study of Zenginol et al. reported that trauma patients were more common (16). When the reasons referred to in the presented study are examined; The most frequently referred patients were cardiology (20.3%), and the reason was not intensive care unit (88.9%), followed by chest diseases patients (19.5%) and no intensive care unit (61.5%), and internal diseases (61.5%) and lack of intensive care unit (64%). It was determined that 67% of cardiology patients were referred to a private hospital, 33% to a secondary level hospital, and 11.1% to another province. Of the pulmonary diseases patients, 50% are referred to a private hospital, 56% to a secondary level state hospital and all within the province, while internal diseases patients are referred to 44% private hospitals, 52% secondary state hospitals and 4% tertiary hospitals, and 20% It was determined that he was sent out of the province. In fact, another striking point in the study was that almost all clinical branches were not referred for further examination and treatment purposes. This is due to the fact that the hospital is technically adequate, but lacks a service and intensive care unit. This situation led to the

conclusion that there was a patient referral due to preventable deficiencies and that a tertiary hospital was insufficient.

CONCLUSION

Tertiary hospitals are expected to be more equipped centers than other hospitals in terms of technical, personnel, patient service, intensive care, and many other aspects. Only the quality of equipment and personnel is not sufficient in such centers. Patient beds and intensive care units are very important factors that should not be ignored. For this reason, the adequacy of all factors should be taken into account during the establishment phase in order for tertiary care hospitals to be functional.

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