

Analysis of Patients Presenting with Chest Pain to the Emergency Department

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ABSTRACT

Introduction: Emergency services are the areas where many patients are evaluated that require a multidisciplinary approach and unexpectedly occurred and immediate intervention. Therefore the variety of diseases is unlimited.

The aim of this study is to reveal the characteristics of patients who consult to the emergency service with complaints of chest pain and to provide more qualified and quickly serviced on settlement of the emergency medical services with the diagnosis that they get after the consult and the obtained results.

Materials and Methods: This study was realized prospectively over patients who consulted with the complaint of isolated chest pain to Ataturk University, Faculty of the Medicine, Emergency Clinic for a one-month period in July 1-30, 2018.

Patients were excluded from the study who have additional symptoms of chest pain (such as shortness of breath, palpitations, back pain).

Result: Chest pain of 94 patients (81 %) who participated in the study was in typical character. 27 of 116 patients (23.3%) with whom we completed our study were hospitalized with the ACS diagnosis. ECG of 81 patients (69.8%) in our study was normal features. If the age and the hospitalization conditions of patients will be examined, the average age of the patients who consulted with the chest pain and hospitalized is as follows; while the average age of patients who hospitalized was 58.56 ± 15.941 , who discharged was 49.58 ± 17.823 and it was statistically significant ($p < 0,05$). It has been found that the patients who had typical pain were more hospitalized ($p < 0,05$) when the hospitalization rates and pain character were compared.

Discussion: The consults with the complaints on chest pain (CP) and acute coronary syndrome (ACS) have an important position in the group of patients evaluated in emergency services. These patients create a serious workload to the emergency physician in terms of both numbers and process. The role of emergency services is considerably important in emergency health services. Emergency services that serve 24 hours, are showcase of the hospitals. In addition, emergency services are the units where the diagnosis and treatment of acute cases requiring immediate intervention are realized. In emergency services, providing health service in a fast and high quality manner, in the shortest time possible is the main target.

Conclusion: The number of consults to the emergency services that work in an intense fast-paced manner is increasing day by day due to the many reasons such as increasing population, easy consult possibility, off-duty patient acceptance.

Keywords: Chest Pain, Emergency Visits, Acute Coronary Syndrom

INTRODUCTION

Emergency services are the windows that pops up to the public and the units where the most relationships of the hospitals with the community are. The necessity of the providing fast, accurate and uninterrupted service in the most of the patients requires that emergency medical services should be different from other

medical fields in terms of physical structure and staff strength (1). Emergency services are the most important unites of the hospitals that provide uninterrupted service and where all kinds of emergency patients and injured people are cared (2,3). Applying these services to the patients as soon as possible and as quickly as possible should be considered as the main target

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and act upon. In addition, patients with non-emergency and simple-mild complaints often prefer emergency service as well (4). Emergency Medicine involves making immediate decisions and the implementation immediately in order to prevent the death or disability of the person who has health problem. It is important that this medical service, which starts with the request of the patient, is always accessible everywhere. The diversity of the diseases is unlimited and covers the physical and behavioral emergency problems of the patient with any complaint. In this respect, the structuring and work manner of the emergency services directly affect the quality of patient care (1). The best place where the medical attention is given at the hospital shown is the ESs. When evaluating a hospital primarily ES must be taken into consideration. Besides ESs are the only place where all types of interventions are performed together, they are in a central position that refer patients to other parts of the hospital (5). Emergency services are the areas where many patients are evaluated that require a multidisciplinary approach and unexpectedly occurred and immediate intervention. Therefore the variety of diseases is unlimited.

The aim of this study is to reveal the characteristics of patients who consult to the emergency service with complaints of chest pain and to provide more qualified and quickly serviced on settlement of the emergency medical services with the diagnosis that they get after the consult and the obtained results.

MATERIAL AND METHOD

This study was realized prospectively over patients who consulted with the complaint of isolated chest pain to Atatürk University, Faculty of the Medicine, Emergency Clinic for a one- month period in July 1-30, 2018. Among patients whose complaint with the chest pain ones were only included in the study. Patients were excluded from the study who have

Table1. Patients Vital Findings

	Minimum	Maximum	Average	Standard Deviation (±)
SBP Systolic Blood Pressure	101	200	131, 87	19,442
Diastolic Blood Pressure	28	117	78,40	14, 989
Oxygen Saturation	77	98	92,98	2,969
Respiration rate	10	40	22,62	5,764
Pulse	49	145	78,09	16,276
Fever	35,7	37,8	36,322	0,2986

Of the patients who participated in our study, 94 patients (81%) had typical chest pain. 27 of 116 patients (23.3%) with whom we completed our

additional symptoms of chest pain (such as shortness of breath, palpitations, back pain). The study was carried out by the physician who works in our emergency service. The generated study form was filled with the face-to-face interview method. Age, gender, pain type (typical, atypical), systolic and diastolic blood pressure, saturation, oxygen saturation, pulse, fever, hospitalization status and parameters of ischemic ECG changes were recorded on the form.

Typical chest pain criteria

- Compressor, overwhelming, by way of the pressure,
- Pain occurs in retrosternal area
- Spreading of the pain to the jaw and front arm.
- The worsening pain with effort.
- The chest pain who provide these 4 charters has been described as typical chest pain.

Ischemic ECG changes have been determined as all kinds of P, QRS and T wave changes. That is, all ECGs except for normal ECG have been determined as ischemic ECG changes.

RESULTS

316 patients consulted with the complaint of chest pain in the given time to the emergency service.

Of these, 174 patients were not included in the study due to the having additional symptoms. 26 patients were not included in the study because they did not want to participate in the study or were unable to confirm. Our study was completed with 116 patients. Total 11280 patients were consulted to emergency service during this period.

The average age of patients included in our study 51.67 ± 17.749 (minimum 18, maximum 89). Vital findings are summarized in Table-1. 51 (43.96%) of these 116 patients were female genders.

study were hospitalized with the ACS diagnosis. ECG of 81 patients (69.8%) in our study was normal features.

If the age and the hospitalization conditions of patients will be examined, the average age of the patients who consulted with the chest pain and hospitalized is as follows; while the average age of patients who hospitalized was 58.56 ± 15.941 , who discharged was 49.58 ± 17.823 and it was statistically significant ($p < 0,05$). It has been found that the patients who had typical pain were more hospitalized ($p < 0,05$) when the hospitalization rates and pain character were compared. The hospitalization status of the patients who consulted with the systolic and diastolic blood pressure, pulse rate, respiratory rate, fever rate is not statistically significant ($p > 0.05$).

It was statistically meaningful between the patients hospitalized with oxygen saturation and who did not however it is meaningless clinically because all patients have normal range of oxygen values. ECG changes of hospitalized patients were more as expected and this was statistically significant ($p < 0.05$).

DISCUSSION

Consultations with complaints that being evaluated as chest pain (CP) and acute coronary syndrome (ACS) have an important place in the group of patients who evaluated in emergency services. These patients create a serious workload to the emergency physician in terms of both numbers and process.

The role of emergency services is considerably important in emergency health services. Emergency services that serve 24 hours, are showcase of the hospitals.

In addition, emergency services are the units where the diagnosis and treatment of acute cases requiring immediate intervention are realized.

In emergency services, providing health service in a fast and high quality manner, in the shortest time possible is the main target.

The number of consults to the emergency services in running an intense fast-paced is increasing day by day due to the many reasons such as increasing population, easy consult possibility, off-duty patient acceptance.

In our study, the chest pain, which is the cause of the frequent consult to the emergency service, has been examined. This study was realized on the patients who consulted to the emergency medicine clinic of Ataturk University, Faculty of Medicine between the dates of July 2018 1-30. CP may have been accepted as one of the most frightening symptoms of a person. 30-40%

of the people complain about CP at least once throughout their lives (6). The estimated global prevalence for CP was calculated as 13% in a meta-analysis that has been published recently (7).

CP is one of the frequent and at the same time complex complaints of emergency service consults worldwide as a natural consequence that it is seen as widespread prevalence in the community (8,9).

In 3-6 % of the emergency consults, CP is the only complaint (10). Only 1% of one applicant's complaint in all consults was isolated chest pain in our study. 8-10 million consults are made per year due to CP reason in the United States (USA) and this number is often ranged as second among all emergency services. The number of annual consults are increasing gradually (11, 12).

Although the focus is usually on vitally threatening reasons during the evaluation of the patients who consulted with the CP to the emergency service, the last diagnosis on most patients is simple reasons or other reasons that are non- life-threatening causes. In a study on people who consulted with CP to the emergency service, only 8% of the patients were diagnosed acute MI and 9% of them were diagnosed unstable angina pectoris (UAP)(13). CP that is often encountered as a symptom at ES is a traumatized situation for the patient and family of him/her and it is important that the diagnosis and treatment program of it are started quickly. Cardiac or non-cardiac heart diseases are located on the physiological basis of chest pain. In both cases, neurological transmission plays a role in feeling of the pain. Chest pain has been the most important and frequent seen complaints in internal complaints of the patients that consulted to the ES. It has been reported that 5.1 % of the patients consulted with the chest pain and the symptoms associated to it to the ES in the study where data of many centers of the USA in 2002 (14). 23.3% of the patient who consulted with the chest pain to our emergency service in our study hospitalized with diagnosis of the ACS. It was statistically significant when the hospitalization rates and pain characters were compared and this result means tendency of patients with chest pain that is in typical qualities to be more hospitalized for the control purposes.

CONCLUSION

Emergency services are the most important showcase of a hospital. For this reason, it

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reflects structure, functioning, intensity of a hospital in a great extent. Patients who consult to the emergency service must be known well for the reason that emergency services are functioned well, fast and provide quality service and so we have been examined the chest pain complaint that is frequent consultation reason in emergency service.

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