EVALUATION OF INFECTIOUS DISEASES CONSULTATIONS REQUESTED BY EMERGENCY SERVICE IN THE TERTIARY CARE SETTING

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ABSTRACT

Objective: *The primary aim of this study is to evaluate the frequency and distribution of consultations relevant to infectious diseases at Emergency Service.*

Material and Method: *Consultation requests from Emergency Service to Infectious Diseases and Clinical Microbiology were overviewed. The study was retrospectively performed at Ankara Training and Research Hospital between July 2014 and December 2014. All consultation requests by the Emergency Service were evaluated and distribution of consultations according to the clinics, and reasons for the consultation and hospitalization rates were investigated.*

Results: *Within six months, a total of 1,399 patients were consulted by the Department of Infectious Diseases and Clinical Microbiology, accounting for 5.1% of all consultation requests. Most frequent consultation reasons were detected as lower respiratory tract infections (25.8%), fever etiology (25.8%), urinary tract infections (11.4%), and animal bite/rabies prophylaxis (10.4%). The hospitalization rate after consultation by infectious diseases clinic was found to be 10.1 %.*

Conclusion: *According to these results, it is considered that more cooperation and educational activities are needed between the Emergency Service and Infectious Diseases specialists.*

Keywords: *Emergency medicine, consultation, emergency infections.* **Nobel Med 2017; 13(2): 48-51**

ÜÇÜNCÜ BASAMAK HASTANEDE ACİL SERVİSTEN İSTENEN İNFEKSİYON HASTALIKLARI KONSÜLTASYONLARININ İRDELENMESİ

ÖZET

Amaç: Bu çalışmanın primer amacı Acil Serviste infeksiyon hastalıkları ile ilgili istenen konsültasyonların sıklığı ve hastalık dağılımını tanımlamaktır. Bu amaçla Acil Servis'ten istenen infeksiyon hastalıkları konsültasyonları irdelenmiştir.

Materyal ve Metot: Çalışma Ankara Eğitim ve Araştırma Hastanesi'nde, 1 Temmuz ve 31 Aralık 2014 tarihleri arasında retrospektif olarak yapılmıştır. Acil Servis'ten istenen tüm konsültasyonlar gözden geçirilmiş, konsültasyonların kliniklere göre dağılımı, infeksiyon hastalıklarından konsültasyon istenme nedenleri ve hastaneye yatış oranları araştırılmıştır.

Bulgular: Altı aylık periyotta toplamda 1399 hasta İnfeksiyon Hastalıkları ve Klinik Mikrobiyoloji Kliniği tarafından konsülte edilmiştir, bu da tüm konsültasyonların %5'ini oluşturmaktadır. En sık konsültasyon nedenleri; alt solunum yolu infeksiyonları (%25,8), ateş etiyolojisi (%25,8), üriner sistem infeksiyonları (%11,4), hayvan ısırıkları/kuduz profilaksisi (%10,4) olarak tespit edilmiştir. İnfeksiyon hastalıkları konsültasyonlarının sonucunda hastaneye yatış oranı %10,1 olarak bulunmuştur.

Sonuç: Bu sonuçlara göre, Acil Servis ve İnfeksiyon Hastalıkları doktorları arasında daha fazla işbirliği ve eğitim aktivitelerine gerek olduğu düşünülmektedir.

Anahtar kelimeler: Acil tıp, konsültasyon, infeksiyon acilleri. **Nobel Med 2017; 13(2): 48-51**

INTRODUCTION

Patients with infectious diseases mostly apply to the Emergency Service with various symptoms, primarily with fever. On the other hand, the course of infectious diseases has been changed in the recent years and gained a potential to create new epidemic. These patients may initially apply to the Emergency Service.[1] Therefore, Emergency Service physicians should recognize the infectious diseases, be able to recognize infectious potential of patients and know how to protect themselves and other patients. However, there is a limited number of studies looking deeper into the the reasons for consultation of infectious diseases in the emergency setting.[2]

In this study, we aimed to evaluate the frequency and distribution of consultations relevant to infectious diseases in the emergency setting.

MATERIAL AND METHOD

Study Population

Between July 2014 and December 2014, a total of 27,615 adult patients who applied to the Emergency Service of Ankara Training and Research Hospital were retrospectively analyzed. Consultations were evaluated according to the outpatient clinics and the reasons and decision of inpatient either ambulatory treatment with an infectious disease diagnosis.

RESULTS

During six-month period, a total of 173,609 (18.62%) of 932,358 patients were admitted to the hospital and Emergency Service. Of these, 145,995 (84.1%) were treated by the Emergency Service physicians, while 27,615 (15.9%) were consulted. The number and rate of the consultation requests are shown in Table1.

Infectious diseases were the ninth frequent clinical presentation amongst the all clinics for consultations of Emergency Service. The number of infectious disease consultations was 1,399, accounting for 5.1% of total consultations. The most common consultation requests for infectious diseases were pneumonia and lower respiratory tract infections in 25.8% (359 patients); fever etiology in 25.8% (358 patients); urinary tract infections in 11.4% (158 patients); animal and human bite-scratch in 10.4% (146 patients); skin and soft tissue infections in 8.8% (123 patients); central nervous system infections in 3.6% (51 patients); septicemia in 2.2% (31 patients); gastroenteritis in 2.1% (29 patients); Crimean-Congo hemorrhagic fever suspicion in 1.1% (15 patients); MERS-EBOLA suspicion in 1.1% (15 patients); and elevated white blood cell count in 1% (14 patients). (Table 2).

Although 15 MERS or Ebola suspected patients were demanded for consultation, none showed any symptoms, according to the description of MERS and Ebola diseases. Among the consultations, 142 patients (10.2%) were hospitalized and 1,257 patients (%89.8) were treated in the ambulatory setting.

DISCUSSION

Applications to Emergency Services have been drastically increased over the few decades. According to the Turkey Public Hospitals Annual Statistics, application both to hospitals and Emergency Services correspondingly increased also. In 2004, in Turkey the rate of medical examinations in the emergency setting is 27% of all medical examinations, accounting for 30% on the public hospitals and varies between 14 and 18% in private hospitals. Most of the Emergency Services (ratio of 84%) have been handed out by the Ministry of Health.[3] As a public hospital in which this study was carried out, a high number of applicants to the Emergency Service on both day and night was reported (18.62%). This ratio can be interpreted lower than the overall mean, as it is a Training and Research hospital and offers outpatient clinical services. It also decreases the focus on the numbers estimated by the overall mean.

Consultation means a communication between physicians and a need of a physician to take an opinion of another physician on the diagnosis or treatment of a patient. To implement a safe patient care, an improved consultation and communication between physicians should be established. Patients may present to Emergency Services with varying signs and symptoms, and the reason for consultations are most needed in the emergency setting, compared to all other services.[4] According to a study from Canada, at least one consultation was needed in 38% of patients admitted to emergency services.[5] In the present study, this rate was 15.9% of patients.

Furthermore, the admission rate of the Emergency Services may vary according to the access possibility to health care, structure of the hospitals, and emergency medicine services, and education and financial status of patients, as well as geographical and seasonal variations.[6,7] Depending on these, consultation requests may vary, also. In a study, the most of the consultation requests were from surgery clinics in the emergency setting. In Turkey, the most consultation requests were for internal medicine, orthopedics,

Table 1. Consultation requests from emergency service according to outpatient clinics

Clinics	Consultations		Clinics	Consultations	
	Number	%		Number	%
Orthopedics and Traumatology	7525	27.25	Cardiovascular Surgery	254	0.92
General Surgery	2675	9.68	Anesthesiology and Reanimation	97	0.35
Internal Medicine	2220	8.04	Psychiatry	33	0.12
Gynecology and Obstetrics	2157	7.81	Pediatric Surgery	24	0.08
Ophtalmology	2062	7.46	Gastroenterology	17	0.06
Otorhinolaryngology	1861	6.74	Physical Medicine and Rehabilitation	11	0.04
Neurology	1565	5.66	Maternity Ward	8	0.03
Cardiology	1524	5.52	Endocrinology	5	0.02
Infectious Diseases and Clinical	1399	5.06	Nephrology	5	0.02
Brain and Nerve Surgery	1170	4.23	Family Practice	4	0.01
Plastic and Reconstructive	1028	3.72	Adult Hematology	4	0.01
Burn Unit	843	3.05	Pediatrics	5	0.015
Urology	405	1.46	Pediatric Emergency Service	2	0.005
Chest Diseases	369	1.33			
Dermatology	346	1.25	**Total Value**	**27615**	**100.0**

Table 2. Distribution of consultation reasons from infectious diseases

Consultation Reason	Numbers	%
Pneumonia and lower respiratory infections	359	25.6
Fever etiology	358	25.6
Urinary tract infections	159	11.4
Animal or human bite-Scratch	146	10.4
Skin and soft tissue infections	123	8.8
Central nervous system infections	51	3.6
Septicemia	31	2.2
Gastroenteritis	29	2.1
Crimean-Congo Hemorrhagic fever suspicion	15	1.1
MERS-Ebola suspicion	15	1.1
Elevated white blood cell count	14	1
Others*	99	7.1
Total	**1399**	**100**

*: Consultation reason is not stated

general surgery, and gynecology and obstetrics clinics.[8,9] In this study, we found that the majority of the consultation requests were for orthopedics and traumatology, followed by general surgery, internal medicine, gynecology and obstetrics clinics, and lastly ophtalmology. In the aforementioned studies, infectious diseases consultations ranked with 10 (4.3%) and 12 (2%) among all consultations.[8,9] Infectious diseases consultations rate requested from the Emergency Services was 5.1% and ranked as the ninth among all consultations in our study.

There are many factors which may affect the application to the Emergency Services with symptoms compatible with infectious diseases, such as the frequency of infectious diseases in the population, new epidemics or fear of some diseases, and delivery of services .Nonetheless, epidemiological data on this subject is limited. In an US study including a-nine-year data, 18.4% of patients with infectious diseases were admitted to the Emergency Services with the highest rate among 0-4 year-old children.9. In the aforementioned study, the annual percentage of applications to the Emergency Services due to infectious diseases was 3.4% among all adults, however, an increase by 19% was found in 2009 due to H1N1 pandemic. These numbers are quite lower than our findings and it can be explained by differences in healthcare systems, sociodemographic features, and several relevant factors. In another study carried out in Turkey, admission with symptoms related to infectious diseases was ranked third in the application list of the Emergency Service. Despite this rate, 30.8% of these patients were consulted with the Department of Infectious Diseases and the consultation rate due to infectious diseases was 3.5% of all applications.

In addition, the major reasons for infectious diseases consultations were lower respiratory tract infections (25.8%) and fever etiology in our study. Urinary tract infections, animal bites/rabies prophylaxis, skin and soft tissue infections, and septicemia suspicion followed following them. According to the study of Fisgin *et al*., the main reasons for consultations were reported as urinary tract infections (16.8%), central nervous system infections (15.1%), skin and soft tissue infections (9.5%) and septicemia (7.1%).[1] In our hospital, pulmonologists do not serve at night and holiday shifts. On the other hand, the hospital serves as one of the reference hospitals for rabies prophylaxis. These are the reasons why our rate is different compared to previous studies. These findings also suggest that the infrastructure of the facility and specialties are the major factors affecting the admission rate to the Emergency Services.

In this study, hospitalization rate was found to be 10.2% among the consultations in clinics of infectious diseases. This rate is also similar to the previous study findings.[1,10]

In conclusion, regional characteristics and requirements should be considered in the evaluation of the consultations from the Emergency Services. Tracking system for the Emergency Service applications is also crucial for the epidemiology and surveillance analysis of infectious diseases. Furthermore, as

patients with infectious diseases may present with various symptoms, an improved collaboration and training activities should be established between the Emergency Services and Infectious Diseases Clinics. In addition, in our study, 15 patients with Crimean-Congo hemorrhagic fever with the risk of nosocomial transmission were unable to be confirmed and were consulted to the Infectious Diseases clinic. These finding indicate that nosocomially-transmitted pathogens should be recognized and Emergency Services and medical staff should be prepared for an epidemic or an outbreak, as they are at the primary risk group.

*The authors declare that there are no conflicts of interest.

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