

# Distribution of Patients Referred From the Emergency Department to the Otolaryngology Clinic

● Melis Demirağ Evman, ● Hakan Avcı, ● Sedat Aydın

Department of Ear, Nose and Throat Diseases, University of Health Sciences Kartal Dr. Lütfi Kırdar Training and Research Hospital, Istanbul, Turkey

Submitted: 03.09.2018  
Accepted: 07.11.2018

Correspondence:  
Melis Demirağ Evman,  
SBÜ Kartal Dr. Lütfi Kırdar Eğitim ve Araştırma Hastanesi, KBB Kliniği, Istanbul, Turkey  
E-mail: melisdemirag@hotmail.com



**Keywords:** Emergency department; emergency ENT referrals; patient distribution.

## ABSTRACT

**Objective:** Emergency departments (EDs) are overcrowded with patients having ear, nose, and throat (ENT) complaints. A large proportion of patients are not true emergencies. Therefore, understanding patient demographics and referral patterns are important to reduce the number of ED visits. Understanding these will highlight the areas for the improvement of care, cost effectiveness, and education.

**Methods:** Patients who were referred to the adult ED and consulted the ENT clinic between January 2016 and February 2017 were reviewed retrospectively. Age, gender, and diagnosis made at that time were analyzed.

**Results:** A total of 10,110 patients were admitted to the adult ED and referred to the ENT clinic. Of those, 5,919 (58%) were men and 4,217 (42%) women, with an average age of 44.9 (range, 18–90 years). The most common three diagnoses made during the study period were (in the descending order): epistaxis (n=3,101; 31%), nasal fractures (n=1,620; 16%), and nasal foreign bodies (n=927; 9%).

**Conclusion:** Learning about the most common referral diagnosis made for ENT patients in the ED will enable institutions to find new ways to decrease the number of ED referrals and to conduct non-urgent cases to ENT outpatient clinics. Also, the education process of health employees will be more efficient. Thus, the quality of health care will increase, and costs will decrease.

## INTRODUCTION

Emergency departments (ED) across the world are the most crowded places in hospitals. Studies made in the United States show that over 2 million patients were seen in EDs for otitis media and eustachian tube disorders in 2010.<sup>[1]</sup> Studies examining the workload of general surgery emergency patients have been conducted, but very little has been written about the otolaryngology caseload.<sup>[2]</sup> Ear, nose, and throat (ENT) complaints such as the nasal obstruction, sore throat, and ear problems make up an important portion of ED visits; therefore, analyzing cases referring to ENT clinics from EDs is an important step in the caseload management.

In addition to direct admission, training and research hospitals in Turkey also accept patients referred from other local hospitals without ENT services. In addition, it takes too long for patients to make appointments for outpatient clinic visits, so they tend to consult EDs. This behavioral pattern results in crowded EDs. Urgency is actually a subjective concept, and it depends on social situations, employment, family, bureaucratic factors, and the patients'

health.<sup>[3]</sup> Therefore, some of the cases are not even true medical emergencies. In a study, it was reported that only 10% of cases seen in EDs were true emergencies.<sup>[3]</sup> This creates an enormous workload for both the ED and ENT clinic workers. Also, it causes care givers to spend less time on real emergencies. Patients with non-urgent complaints cause loss of time and money. Therefore, these types of patients should be treated at alternative centers to solve this problem. In a recent study, researchers found that 13.7%–27.1% of all ED patients could be treated at other non-urgent care places.<sup>[4]</sup>

In our study, we present a detailed analysis of patient demographics and distribution of common ENT complaints in our ED. In this manner, we aim to highlight the areas of enhancement in the treatment, time management, cost effectiveness, education, and effective use of medical care givers.

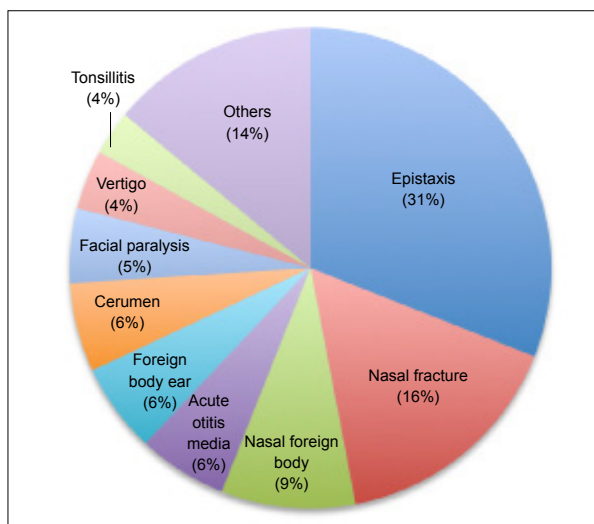
## MATERIAL AND METHODS

Between January 2016 and February 2017, electronic records of patients who applied to the adult ED and those who were referred to the ENT clinic were reviewed. This

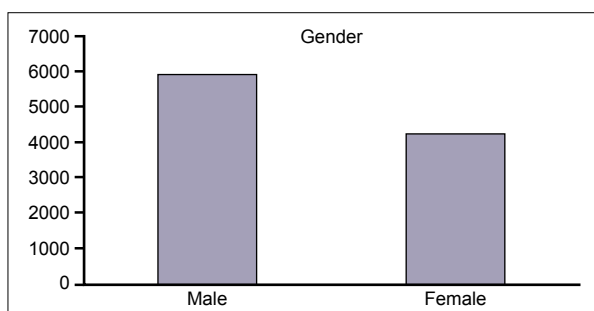
study design was chosen because it was low cost with a high description potential and methodical simplicity. Since our hospital is a training- and research-based institution, all patients were evaluated by residents and attending physicians in ED; afterwards, in the otolaryngology clinic, they were seen by residents and otolaryngology head and neck specialists. Data collected include demographics and diagnoses made on the first admission of patients to our hospital. Data were recorded using the ICD procedure codes. The Microsoft Excel (Microsoft Corp., Redmond WA) program was used in the statistical analysis.

## RESULTS

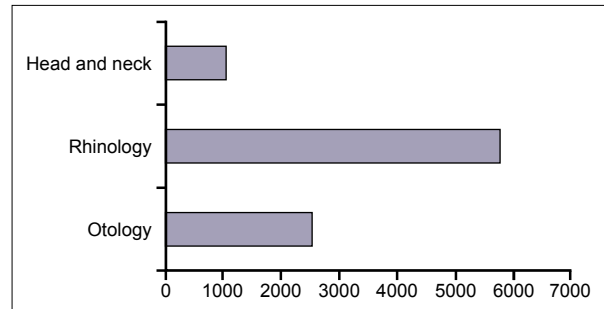
A total of 50,734 patients were seen in our hospital's ED during the study period. Of those, 10,136 were referred to the ENT clinic. The three most common diagnoses made during the study period were (in the descending order): epistaxis (n=3101; 31%), nasal fractures (n=1620; 16%), and nasal foreign bodies (n=927; 9%). They were followed by acute otitis media (n=632; 6%), foreign bodies in the ear (n=629, 6%), cerumen (n=577, 5%), acute facial paralysis (n=494, 5%), vertigo (n=379, 4%), tonsillitis (n=369, 3%), vocal-cords-related diseases (n=183, 2%), and other conditions, such as the upper respiratory tract infections (URTI), acute rhinosinusitis, acute rhinitis, tinnitus, sali-



**Figure 1.** Most common diagnoses made in the ED and referred to the otolaryngology clinic (n=10,118).



**Figure 2.** Male-female distribution.



**Figure 3.** Distribution of cases within otolaryngology subspecialties.

vary gland diseases, and external otitis (n=1,390, n=14%) (Fig. 1).

In our study, 5,919 (58%) of the patients were men, and 4,217 (42%) women, with an age average of 44.9 years (range 18–90 years) (Fig. 2). When we analyzed the distribution of patients who were diagnosed by ENT providers, it was seen that the most common complaints were with regard to rhinology, followed by complaints about otology, and less by head and neck concerns (Fig. 3).

## DISCUSSION

With medical improvements, human life is getting longer and the world becomes more populated, and this leads to an overwhelming number of hospital visits. EDs are the most common places found in hospitals. Patients consulting EDs are not always real emergencies. This puts a burden on the doctors taking care in EDs and also for the governments paying millions annually for unnecessary admissions. In the world, as well as in our country, a greater number of doctors, more spaces for rounds, and more working hours are required due to a devastating number of ENT visits. Unfortunately, most EDs continue to see an elevated number of patients with ENT complaints. In addition, a high number of them actually do not need to be evaluated in an emergency care unit by an ENT specialist but may necessitate an ENT outpatient clinic visit.<sup>[5]</sup> The number of patients in our study is a good example of this. We found that over 10,000 patients were seen in a 1-year period in our ENT clinic.

In a study, it was found that the most common diagnoses made were vertigo, external otitis, and nasal fractures, and they concluded that their study was similar to other published hospital audits and epidemiologic studies.<sup>[5,6]</sup> In another study including 1,067 patients, the most common diseases during the study period were the URTI, acute rhinosinusitis, and tonsillitis.<sup>[3]</sup> In a study aiming to identify the utilization of EDs by patients with primary otological complaints, the authors found that the most common diagnoses made were otitis media, external otitis, and otalgia.<sup>[7]</sup> The most common diagnoses made in the ED and referred to the ENT clinic in our study were epistaxis, nasal fractures, and foreign bodies in the ear. Our results show that patients diagnosed in our ED were mostly true ENT

emergencies. When we evaluated the number of referrals, it was found that commonly seen infectious diseases, such as tonsillitis, URTI, etc., were diagnosed and treated in ED and minimally referred to the ENT department. Therefore, our study also shows that ED practitioners are well equipped to diagnose and treat commonly seen ENT emergencies. In this manner, they lower the burden of the ENT clinic with non-urgent cases.

Our study has a number of limitations. First, our analysis was based on retrospective data, and it only included the experience of one institution. In places with different demographics and hospital features, the results may vary. It was impossible to find out about the future follow-up of patients who were referred to our clinic from ED. A prospectively designed study will enable us to follow this group of patients to learn how many of them applied to the ENT outpatient clinic or who consulted our ED with the same complaint more than once.

#### Ethics Committee Approval

Approved by the Kartal Dr. Lütfi Kırdar Training and Research Hospital Ethics Committee (date: 26.12.2017, no.: 2017514120/7).

#### Informed Consent

Retrospective study.

#### Peer-review

Internally peer-reviewed.

#### Authorship Contributions

Concept: S.A.; Design: H.A.; Data collection &/or processing: M.D.E.; Analysis and/or interpretation: H.A.; Literature search: M.D.E.; Writing: M.D.E.; Critical review: S.A.

#### Conflict of Interest

None declared.

#### REFERENCES

1. Kalson NS, Dunn KW. Contribution to national acute injury and intensive care audit databases in England and Wales. *Emerg Med J* 2011;28:538. [CrossRef]
2. Bleach RN, Williamson PA, Mady SM. Emergency workload in otolaryngology. *Ann R Coll Surg Engl* 1994;76:335–8.
3. Prestes L, Hamersmidt R, Tenorio S, Moreira AT, Tambara E. Epidemiologic Profile of an Otolaryngology Emergency Service. *Int Arch Otorhinolaryngol* 2014;18:380–2. [CrossRef]
4. Weinick RM, Burn RM, Mehrotra A. Many emergency department visits could be managed at urgent care centers and retail clinics. *Health Aff (Millwood)* 2010;29:1630–6. [CrossRef]
5. Garneau JC, Wasserman I, Konuthula N, Malkin BD. Referral patterns from emergency department to otolaryngology clinic. *Laryngoscope* 2018;128:1062–7. [CrossRef]
6. Barnes ML, Hussain SSM. Consultant-based otolaryngology emergency service: a five-year experience. *J Laryngol Otol* 2011;125:1225–31.
7. Kozin ED, Sethi RK, Remenshneider AK, Kaplan AB, del Portal DA, Gray ST, et al. Epidemiology of otologic diagnosis in United States emergency departments. *Laryngoscope* 2015;125:1926–33.

### Acil Servisten Kulak Burun Boğaz Kliniğine Yönlendirilen Hastaların Profil Dağılımı

**Amaç:** Acil servisler (AS) kulak burun boğaz (KBB) şikayeti olan hastalar ile dolup taşmaktadır. Bu hastaların büyük bir oranı tıbbi olarak acil hastalar değildir. Bu yüzden hasta özellikleri ve başvuru nedenlerini anlamak bu hastaların AS başvurularını azaltmak için faydalı olacaktır. Bu çalışmada, AS'den KBB kliniğine yönlendirilen hastaların özelliklerini belirleyerek, hasta sayısının azaltılması ve gereksiz iş yükünün neden olduğu kayıpların en aza indirilmesi amaçlanmıştır.

**Gereç ve Yöntem:** Ocak 2016 ve Şubat 2017 tarihleri arasında erişkin AS'ye yapılan ve KBB acil kliniğine yönlendirilen hastalar geriye dönük olarak dijital ortamda ICD kodları ile tarandı. Yaş, cinsiyet ve konulan tanıları değerlendirildi.

**Bulgular:** Acil serviste 10.110 hasta görülmüş ve KBB acil kliniğine yönlendirilmiş. Bu hastaların 5919 (%58) erkek ve 4217'si (%42) kadın olarak belirlendi. Yaş ortalaması 44.9 olarak belirlendi. Başvurularda konuşan en yaygın üç tanisi: epistaksis (n=3101; %31), nazal kırıklar (n=1620; %16) ve burunda yabancı cisim (n=927; %9) olarak bulundu.

**Sonuç:** En sık başvuru şikayetlerini belirlemek, AS'ye başvuran hasta sayısını düşürmek ve acil olamayan hastaları KBB ayaktan poliklinik birimlerine yönlendirmek açısından yol gösterici olacağı düşünülmektedir. Böylece eğiticiler hem AS hem de KBB çalışanlarına uygun bilgi ve eğitimi aktarma konusunda daha başarılı olacaktır. Böylelikle, hastalara sunulan hizmet kalitesi artacak, gereksiz hastane giderlerinin önüne geçilecektir.

**Anahtar Sözcükler:** Acil servis; hasta dağılımı; kulak burun boğaz acil başvuruları.