flora

KISA RAPOR/SHORT COMMUNICATION

FLORA 2018;23(4):223-226 • doi: 10.5578/flora.66353

Epidemiology and Clinical Features of Seasonal Influenza Cases Followed in Our Clinic

Kliniğimizde Takip Ettiğimiz Mevsimsel İnfluenza Olgularının Epidemiyolojisi ve Klinik Özellikleri

Zeynep TÜRE[1], Zehra BEŞTEPE DURSUN[1], İlhami ÇELİK[1], Berna İNANICI[1]

[1] Department of Infectious Diseases and Clinical Microbiology, Kayseri State Hospital, Kayseri, Turkey

SUMMARY

Seasonal influenza is a vaccine-preventable disease with high mortality and morbidity rate in the presence of old age, pregnancy and comorbid diseases. When we evaluated 151 patients with seasonal influenza in the 2015-2016 season, we found that the average age of the patients, comorbid diseases such as chronic obstructive pulmonary disease (COPD) and cardiovascular diseases, and the need for intensive care were high in these patients. However, only two of these patients had vaccination history. Given the reduced morbidity and mortality rates associated with vaccination and cost effectiveness, it is important to raise public awareness of vaccination, especially in the high-risk group.

Key Words: *Seasonal influenza; Vaccination*

ÖZET

Kliniğimizde Takip Ettiğimiz Mevsimsel İnfluenza Olgularının Epidemiyolojisi ve Klinik Özellikleri

Mevsimsel grip, özellikle yaşlılık, gebelik ve komorbid hastalıkların bulunması durumunda mortalitesi ve morbiditesi yüksek olan aşı ile önlenebilen bir hastalıktır. 2015-2016 sezonunda mevsimsel grip tanısı ile takip ettiğimiz 151 hastayı değerlendirdiğimizde hastaların yaş ortalamasının yüksek, kronik obstrüktif akciğer hastalığı (KOAH) ve kardiyovasküler hastalık gibi komorbid hastalıkların fazla olduğunu ve bu hastalarda yoğun bakım ihtiyacının fazla olduğunu gördük. Ancak bu hastaların sadece 2 tanesinde aşılanma öyküsü vardı. Aşılamaya bağlı morbidite ve mortalitede azalma ve maliyet etkinliği göz önünde bulundurulduğunda özellikle yüksek risk grubunda aşılama konusunda toplumun bilinçlendirilmesi önemlidir.

Anahtar Kelimeler: *Mevsimsel grip; Bağışıklama*

Geliş Tarihi/Received: 24/12/2017 - Kabul Ediliş Tarihi/Accepted: 30/04/2018

INTRODUCTION

Influenza, commonly known as the "flu", is a highly contagious viral infection and one of the most severe diseases, representing a major cause of acute upper respiratory tract infections worldwide[1]. These viruses can cause seasonal epidemics, manifesting as an acute febrile disease with variable degrees of severity, ranging from mild fatigue to respiratory failure and death[1]. Due to the epidemics caused by the virus, an average of 3-5 millions of diseases and 250-500 thousands of deaths are seen annually in the world[2]. The disease can cause serious illness and death, particularly among older adults, infants, pregnant women, and those with certain chronic medical conditions[3]. The aim of influenza vaccination in Turkey is to prevent serious outcomes such as hospitalization and death. Therefore, health workers have been vaccinated free of charge since 2010[4]. In this study, we reported the epidemiological and clinical characteristics of the patients diagnosed with seasonal influenza in the season of 2015-2016.

MATERIALS and METHODS

A retrospective descriptive study was conducted in the season of 2015-2016. Data were collected from the medical record of Health Ministry University of Education and Research Hospital. Nasopharyngeal swab samples were taken from patients with a pre-diagnosis of seasonal influenza with clinical and physical examination findings. A suspected case was defined as a case with at least one of the following symptoms: a temperature ≥ 37.5°C, sore throat, cough, rhinorrhea, or nasal congestion. A confirmed case was defined by a positive result with real-time polymerase chain reaction (RT-PCR) assay. Epidemiologic characteristic, symptoms, comorbid diseases, physical examination findings, laboratory findings and complications during the hospitalization were recorded. IBM SPSS statistics version 21 was used to analyze the data.

RESULTS

A total of 151 patients were diagnosed with influenza, of them 56% was female (Table 1). The percentage of the cases subtyped was 71% for influenza A; 26.5% for influenza, B; the median age was 49.77 ± 18.26 and 53% of the patients was over the age of 50 and 22% of them was over 65 years of age. Cough, fatigue and myalgia were the most common symptoms with over an incidence of 90% (Figure 1). 67% of the patients had headache, 62% of them had sore throat, respectively. Tachypnea, nausea and diarrhea were seen less commonly (17%, 17% and 8%, respectively (Figure 1). Chronic obstructive pulmonary disease (COPD) was the most common comorbid disease (29%). One of the five patients had cardiovascular diseases. Approximately 10% of them were pregnant and other comorbid conditions were diabetes mellitus (14%) and immunosuppression (5%). Five of the patients had travel history (Table 1). Ten patients needed mechanic ventilation, and six out of ten needed invasive mechanical ventilation. Neurologic complications developed in three patients (Table 2). Thrombocytopenia, elevated transaminase and creatinine kinase were the most frequently seen laboratory abnormalities. Mean hospital stay of the patients was 7.06 ± 4.42 days. Nine (6%) of

Table 1. Epidemiological characteristics and comorbid disease of the patients

	n= 151(%)
Female	85 (56)
COPD	43 (29)
Over 65 years' old	33 (22)
Cardiovascular disease	29 (20)
Diabetes mellitus	18 (12)
Pregnancy	14 (9)
Travel history	5 (3)
Vaccination history	2 (0.01)

*COPD: Chronic obstructive pulmonary disease.

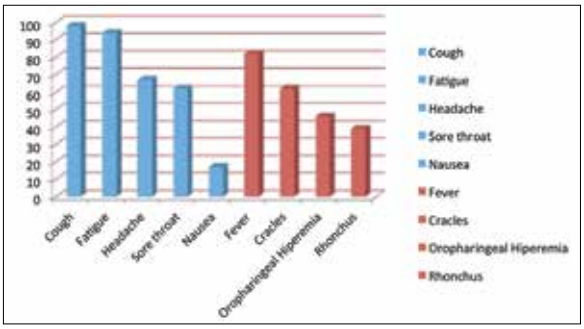

Figure 1. Symptoms and phisical examination findings.

Table 2. Complication of the patients

	n= 151(%)
Pneumonia	127 (84)
Invasive mechanic ventilation	6 (4)
Non-invasive mechanic ventilation	4 (3)
Neurologic complications	3 (2)
Dead	9(6)

the patients died due to seasonal influenza. High percentage of the patients had risk factors for complications; however, only two of the patients were vaccinated for influenza.

DISCUSSION

53% of the patients who were diagnosed with influenza in our study were over 50 years of age, and 22% of them were over 65 years. Similarly, in an epidemiological study conducted by Chiarella et al. in a 6-year follow-up, 30% of patients have been reported to be over 65 years old[1]. Filleul et al. have evaluated patients hospitalized during influenza epidemics in 2016 and reported that quaternary of the patients were over 65 years old[5]. In a surveillance study reported in Canada, 47% of the influenza cases were found to be encountered in patients over the age of 65 in 2012[6].

Comorbid diseases associated with old age are also factors that increase the risk of hospitalization due to influenza. Kuliese et al. reported 72 laboratory confirmed influenza positive patients, of whom 87% had at least one comorbid disease and 47% had cardiovascular disease[7]. The most common comorbidities in our study were COPD (29%) and chronic heart disease (19%). In similar studies, these rates have been reported between 36% and 42%[5,8].

In patients followed up in the intensive care unit (ICU), mechanical ventilation requirement due to respiratory insufficiency is higher, and mortality risk increases due to this highness. In our cases, the overall mortality rate was 6%, while the mortality rate was 66% for those who needed intensive care. Kuliese et al. have reported the mortality rate as follows 5.6%[7]. In Korea, a mortality rate of 1.3% in adult patients hospitalized with influenza and a mortality rate of 27% in the ICU have been reported[8]. Compared with other studies, it is important to take preventive measures before the disease occurrence because of our higher mortality rates.

The most effective way to prevent potentially severe influenza complications is vaccination[7]. However, when we evaluated our patients with influenza, we saw that only two patients were vaccinated. Zhang et al. reported the effectiveness of vaccination and determined 45% for influenza A and 60% for influenza B during the 2015-2016 season[9]. In Europe, a multicenter study have reported 42.5%[10]. The cost also rises due to influenza-related hospitalization and complications such as ICU requirement and antibiotic use[6]. The implementation of national vaccination programs was found to be cost-effective in studies conducted for this purpose[6].

CONCLUSION

In this study, we found that more than fifty percent of the patients with the diagnosis of seasonal influenza had respiratory and cardiovascular comorbidities. Nasopharyngeal swab specimens should be evaluated with PCR from patients with clinical symptoms during the influenza season, and patients in the risk group should be closely monitored for complications. The importance of vaccination should be emphasized well, especially in the high-risk group in terms of morbidity and mortality.

REFERENCES

1. *Chiarella FC, Daoud Z, Fuentes-Ferrer ME, Ramos-Amador JT, Picazo JJ, Culebras E. Characterization and circulation of sseasonal influenza viruses in Madrid, 2010-2016. J Med Virol 2017;89:1726-33.*
2. *http://www.who.int/mediacentre/factsheets/fs211/en. Availabledate, 2016.*
3. *Grohskopf LA, Sokolow LZ, Broder KR, Walter EB, Bresee JS, Fry AM, et al. Prevention and control of seasonal influenza with vaccines: recommendations of the advisory committee on immunization practices-united states, 2017-18 influenza season. MMWR Recomm Rep 2017;66:1-20.*
4. *(http://ekmud.org.tr/files/uploads/files/EriskinBagisiklama-Rehberi-web-1.pdf (available date:02.11.2017).*
5. *Filleul L, Ranoaritiana DB, Balleydier E, Vandroux D, Ferlay C, Jaffar-Bandjee M, et al. A majör impact of the influenza seasonal epidemic on intensive care units, Réunion, April to August 2016. Euro Surveill 2016;21:pii:30405.*

6. *Thommes EW, Kruse M, Kohli M, Sharma R, Noorduyn SG. Review of seasonal influenza in Canada: burden of disease and the cost-effectiveness of quadrivalent inactivated influenza vaccines. Human Vaccınes&Immunotherapeutics 2017;13:867-76.*

7. *Kuliese M, Jancoriene L, Grimalauskaite R, Zablockiene B, Damuleviciene G, Velyvyte D, et al. Seasonal influenza vaccine effectiveness against laboratory-confirmed influenza in 2015-2016: a hospital-based test-negative case-control study in Lithuania. BMJ Open 2017;7:e017835.*

8. *Choi WS, Cowling BJ, Noh JY, Song JY, Wie SH, Lee JS, et al. Disease burden of 2013-2014 seasonal influenza in adults in Korea. PLoS ONE 2017;12:e0172012.*

9. *Zhang Y, Wu P, Feng L, Yang P, Pan Y, Feng S, et al. Influenza vaccine effectiveness against influenza-associated hospitalization in 2015/16 season, Beijing, China. Vaccine 2017;35:3129-34.*

10. *Kissling E, Valenciano M. Early influenza vaccine effectiveness results 2015-16: I-MOVE multicentre case-control study.Euro Surveill 2016;21.*

Yazışma Adresi/Address for Correspondence

Dr. Zeynep TÜRE

Kayseri Şehir Hastanesi, İnfeksiyon Hastalıkları ve Klinik Mikrobiyoloji Kliniği,
Kayseri-Türkiye

E-posta: dr.zeynepture@gmail.com