Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

COVID-19 among Turkish citizens returning from abroad

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Dear Editor,

The first confirmed COVID-19 case reported from Turkey was on March 11, 2020, after a man who returned to Turkey from Europe. After that day, Turkish citizens who are abroad were evacuated back to the country and quarantined as a part of national infection control measures [1]. The Umrah pilgrims were among the quarantined being a unique cohort of people with a greater risk of acquisition viral respiratory infections due to travelling internationally and size of people performing the worship in the same place [2]. In our city (Kayseri, Turkey), the last convoy returning from Umrah was arrived on March 15, 2020. In this study, we aimed to investigate the rate of infection among returning Turkish citizens. In addition to that we examine the risk factors for severe infection among returning Umrah visitors in the same convoy.

Nasal and pharyngeal swabs were obtained from all citizens as soon as they arrived the Turkish International Airports. The swabs were tested for COVID-19 by reverse transcriptase polymerase chain reaction and positive results were defined as confirmed COVID-19 cases. All of the citizens were questioned for the symptoms of COVID-19 such as fever above 38 °C, cough or sore throat, myalgia and shortness of breath. Symptomatic cases were hospitalized and treated in Kayseri City Hospital. Asymptomatic cases were also housed in a separate building and isolated for 14 days. During this period, the patients who developed symptoms compatible with COVID-19 were also transferred to the Kayseri City Hospital. Laboratory tests were performed for cases including assessment of a complete blood count, liver function tests and lactate dehydrogenase. Chest radiography and computed tomography (CT) was also performed for all case patients. The confirmed cases were classified as being mild or moderate and severe. Severe disease was defined as patients with a respiratory rate >30 breaths/minute, respiratory distress and oxygen saturation (SpO2) <93%. Mild or moderate cases were defined as less severe clinical symptoms such as low-grade fever and cough with no evidence of severe pneumoniae.

A total of 264 participants were enrolled (median age, 55,6 years [range, 13–87 years]; 46% male). Among all, 66 (25%) of them were laboratory-confirmed COVID-19 patients. Five of them were returning from European countries and 61 of them were returning from Saudi Arabia. Of 61 confirmed cases returned from Saudi Arabia, 55 of them were Umrah pilgrims in the mid-March convoy. Umrah pilgrims with COVID-19 were classified as being mild or moderate and severe. Univariate logistic regression analysis showed that severity of the disease was significantly related with to be ≥ 65 years old, to have fever >37,9 °C, to have myalgia and to have lower lymphocyte count. Independent predictor of severity of the disease on multivariate logistic regression were only to have fever (OR = 4,1, p = 0.04). In tomography findings, patients with severe disease had more frequently bilateral peripheral ground glass opacities (68% vs 44%), whereas focal consolidation was more frequently observed among patients with mild and moderate disease (18% vs 33%). Tomography findings did not significantly differ among patients. The empirical treatment of patients was covering antimicrobials against atypical pathogens, influenza virus and COVID-19 (Table 1). Among all case patients, 7 (12,7%) were treated in intensive care unit, 4 (7,3%) received invasive mechanical ventilation. All four patients who required mechanical ventilation were died.

Older people are at an increased risk of acquiring COVID-19 and likely to have a serious illness. The risk is higher for those people travelling in groups and worship at the holy sites without social distancing. Accordingly, the Umrah visits are thought to be a super-spreader event though the visitors are the older age of the people compared with the general population and higher risk of having a co-existing chronic disease [2]. In this current study, about one third of the people was above 65, with a median age of 55 years among returning 252 pilgrims. During their 14 days of quarantine, COVID-19 was occurred in about one fifth of them. Rapid action in the early phase of the epidemic and ensuring an early return to the country, might be the effective in preventing the transmission of disease to large numbers of people.

The lower lymphocyte counts were also previously reported to be associated with worse prognosis. In this study, the median lymphocyte count level of severe cases found 1540, however, this level was higher than previously reported studies [3,4]. This may be because during quarantine the patients diagnosed and treated earlier before they developed deep lymphopenia.

Presenting with high fever was found four times more common among patients with severe disease. The presence of a fever in the elderly is more likely to be associated with a serious viral infection than younger adults [5]. So, mass screening for fever and early recognition of severe cases may improve the prognosis especially for elderly.

A small sample size of Umrah visitors included to this study was the major limitation. Infection control precautions should be implemented

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Table 1
Characteristics of patients with mild or moderate and severe COVID-19 among Umrah pilgrims returning to Turkey.

Patients	Mild or moderate, n (%) 39 (73)	Severe, n (%) 16 (27)	p
Median age (range), years	59 (12–85)	66 (45–63)	**0,01**
Age ≥65	11 (28)	10 (62,7)	**0,02**
Male gender	15 (38)	5 (31)	0,7
Initial symptoms			
Fever	16 (41)	12 (75)	**0,02**
Cough	23 (58)	7 (43)	1
Dyspnea	10 (25)	2 (12)	0,1
Sore throat	16 (41)	2 (12)	0,5
Myalgia	15 (38)	10 (62)	**0,01**
Fatigue	28 (71)	11 (68)	0,7
Nausea and vomiting	7 (18)	2 (12)	0,7
Diarrhea	7 (18)	3 (18)	0,4
Comorbidities			
Hypertension	15 (38))	6 (37)	1
Diabetes	10 (25)	2 (12)	0,4
Cardiovascular disease	1 (2)	2 (12)	0,2
Chronic Obstructive Pulmonary Disease	5 (12)	3 (18)	0,4
Laboratory findings			
White blood cells,/μL	5990 (3520–12900)	6380 (3250–16700)	0,5
Neutrophils,/μL	3770 (1190–14300)	4235 (1890–14300)	0,3
Lymphocytes, μL	1900 (890–5340)	1540 (840–2100)	**0,04**
Hemoglobin (g/dL),	14,7 ± 1,2	13,9 ± 1,1	0,1
Platelet count, $x10^3$μL	216 (142–466)	188 (98–389)	0,2
AST, IU	23 (8–84)	25 (13–194)	0,5
ALT, IU	20 (5–63)	20 (11–166)	0,3
Lactate dehydrogenase, U/L	210 ± 32	282 ± 24	0,09
Empirical treatment[a]			
Oseltamivir	36 (92)	15 (93)	0,8
Hydroxychloroquine	35 (89)	14 (87)	0,08
Clarithromycin	34 (87)	15 (93)	0,6
Ceftriaxone	3 (7)	8 (50)	0,01

[a] Oseltamivir (75 mg every 12 hours for five days), Hydroxychloroquine (loading dose of 800 mg followed by 400 mg for five days), Clarithromycin (1g/day for 10–14 days), Ceftriaxone (1gr, every 12 hours).

and strictly followed in travels particularly for mass movements such as Umrah visit. Restricting the travel of people with advanced age and chronic disease during the epidemic period, the use of masks during travel, increasing the awareness of hand hygiene and quarantine for the returning visitors for appropriate duration are among the measures that should be performed for infection control.

Declaration of competing interest

We approve its publication and confirm that there is no conflict of interest related to this article. There is no contribution from other authors and funding agencies.

References

[1] Ulu Kilic A, Kara F, Alp E, Doganay M. New threat: 2019 novel Coronavirus infection and infection control perspective in Turkey. North Clin Istanb 2020;7(2):95–8.
[2] Ebrahim SH, Memish ZA. COVID-19: preparing for superspreader potential among Umrah pilgrims to Saudi Arabia. Lancet 2020;395(10227):e48.
[3] Richardson S, Hirsch JS, Narasimhan M, et al. Presenting characteristics, comorbidities, and outcomes among 5700 patients hospitalized with COVID-19 in the New York City area. J Am Med Assoc.
[4] Zhou F, Yu T, Du R, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet 2020;395(10229):1054–62 [published correction appears in Lancet. 2020 Mar 28;395(10229):1038] [published correction appears in Lancet. 2020 Mar 28;395(10229):1038].
[5] Norman DC. Fever in the elderly. Clin Infect Dis 2000;31(1):148–51.

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