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NEÜ YAYINEVİ

The Decrease in Regular and Emergency Visits to Urology Clinics During COVID-19 Pandemic: An Observational Study

COVID-19 Sırasında Üroloji Kliniklerine Normal ve Acil Başvurulardaki Azalma: Gözlemsel Bir Çalışma

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Öz

Amaç: Bu önce ve sonra çalışmasının amacı, 2019 ve 2020'nin aynı döneminde pandemi öncesi ve sonrası ürolojik konsültasyon ve acil durumlardaki değişiklikleri iki grup olarak karşılaştırmaktır.
Hastalar ve Yöntem: Hasta dosyaları geriye dönük olarak taranmış ve konsültasyon, ameliyat ve yatış sayıları değerlendirilmiştir. İki grup triyaj renk kodları ve nihai kararlar açısından karşılaştırılmıştır. Hastaların yaş ve cinsiyet gibi demografik verileri, triyaj renk kodu, konsültasyon kliniği, vizit tipi (düzenli vs kontrol) ve operasyon verileri (ameliyat tipi, profilaksi durumu, ameliyat yeri vb.) kaydedilmiştir.
Bulgular: 2019 yılında 50 günlük dönemde acil servise toplam 89.674 hasta, 2020 yılında ise aynı dönemde 53.745 hasta başvurmuştur. Aynı dönemde acil servise başvuran hasta sayısı bir önceki yıla göre %40,07 azalmıştır. Yeşil triaj kodlu hastaların oranı 2020 yılında 2019 yılına kıyasla %30 azalırken, aynı dönemde sarı triaj kodlu hastaların oranı ise %28.9 artmıştır. Üroloji vizitlerinde 2020'de %85.91 gibi dramatik bir düşüş yaşanmıştır.
Sonuç: COVID-19 pandemisi hala devam etmekte olup, aşılama programları ve kısa sürede kullanıma sunulacak olan yeni ilaçlar dahil olmak üzere tüm çabalara rağmen bir süre daha devam edecek gibi görünmektedir. Pandemi ile birlikte üroloji kliniğine konsülte edilen hastaların sayısında azalma olmuştur.

Anahtar Kelimeler: COVID-19, üroloji, acil cerrahi, triyaj, yatış, poliklinik

Abstract

Aim: In this pre-and post- study, we aimed to compare changes in urological consultations and emergencies between before and after the pandemic at the same time period of 2019 and 2020 as two groups.
Patients and Methods: Patient files were retrospectively screened and numbers of consultations, surgeries and admissions were evaluated. The two groups compared in terms of triage color codes, and final decisions. Patients' demographic data such as age and gender, triage color code, consultation order clinic, type of visit (regular vs control), and operational data (type of surgery, prophylaxis status, place of OR etc) were recorded.
Results: A total of 89,674 patients presented to the emergency department in the 50-day period in 2019 and 53,745 patients in the same period of time in 2020. The number of patients presenting to the emergency department decreased by 40.07% within the same period compared to the previous year. The percentage of patients with the green triage code was decreased in 2020 by 30% compared to 2019, while the percentage of yellow triage code was increased in 2020 by 28.9% compared to 2019. There was a dramatic fall in urology visits in 2020 by 85.91%.
Conclusion: The COVID-19 pandemic is still ongoing, and it seems likely to continue for some time, despite all efforts including vaccination programs and novel drugs that will also become available in a short time. The number of patients cosulted with urology outpatient clinic has decreased during the pandemic.

Key words: COVID-19, urology, emergency surgery, triage, admission, outpatient

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INTRODUCTION

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) - the virus causing COVID-19 - has been quickly infecting an increasing number of people worldwide (1). Governments have established control measures in a wide range in order to reduce transmission of COVID-19 and to diminish pressure on health care systems. The Turkish government began imposing lockdowns, terminated face-to-face education in school and regulated flexible working hours in numerous types of institutions, including hospitals and the number of staff working from home dramatically increased (2).

The primary focus was on providing the best health care for COVID-19 patients, while regular outpatient care was negatively affected in all medical specialties. In hospitals, even non-emergency surgeries have been postponed indefinitely in many centers. Especially from the beginning of the lockdown and restrictions, non-critical care and elective services were postponed by official regulations, leading hospital volumes to fall (3, 4). For example, studies from the USA have reported a dramatic decrease in utilization of many elective procedures and hospital admissions during the first two months (March and April 2020) of the pandemic (5, 6). In a cross-sectional telephone survey by Hung et al., 30.4% of the participants stated that they avoided medical consultations during the first few months of the COVID-19 pandemic (7).

Changes have occurred in academic and clinical settings across urology centers across Europe. There has been a negative impact on the professional, personal and social life of urologists (8). The characteristics of an “elective” procedure has not been well defined in urology practice. In addition, adequate care should be provided for urological emergencies and urgent urological treatment even during the pandemic. However, like almost all medical specialties, urology practice was also influenced by the COVID-19. Non-COVID-19 presentations to the hospitals have been dramatically decreased worldwide including urological cases. However, studies on the effects of the pandemic on the number of case presenting to the hospitl is limited. In this pre- and post- study, we aimed to compare changes in urological consultations and emergencies between before and after the pandemic at the same time period of 2019 and 2020.

PATİENTS AND METHODS

Before the beginning, the study protocol was approved by the local ethic committee of our hospital with the 2022/265 numbered decision. The written patient consent was waived due to the observational nature of this study, the patient can no longer be found, and the study does not involve personal privacy or commercial interests. The study was executed in accordance with the 1964 Declaration of Helsinki and its later amendments.

In order to observe the complete influence of the COVID-19 pandemic on the urology clinic, the 50-day period between March 12nd and April 30th, 2020 was chosen as the observation period (Group-2). This period of time covered the first 7 weeks of the COVID-19 pandemic. Meanwhile, the same periods in the previous year (ie, between March 12nd and April 30th, 2019) was used as the control period to isolate the association between the COVID-19 pandemic and urology service utilization. Patients were categorized in three colors based on emergency triage.

Patient files were retrospectively screened and numbers of daily consultations, invasive procedures and admissions were evaluated. The two groups compared in terms of triage color codes, time of admission (daytime or night), cause of admission and final decisions. Patients’ demographic data such as age and gender, triage color code, consultation order clinic, type of visit (regular vs control), and operational data (type of surgery, prophylaxis status, place of OR etc) were recorded. Outpatients and those undergoing surgery were sepapercentagely evaluated. Patients who presented out of the study periods and those with missing data were excluded from the study.

Statistical Analysis

Statistical analysis of the obtained data was performed using SPSS version 22.0 (SPSS, Social Package for Social Sciences, IBM Inc., Armonk, NY, USA). Normality of the data was tested with Kolmogorov-Smirnov method. Continuous variables were expressed as mean±standard deviation and categorical variables with frequency (n) and percentage (%). Student t test was used to compare continuous variables, because of that all parameters had normal distribution. Chi-square test was used to compare categorical variables. $P<0.05$ values were considered statistically significant.

RESULTS

A total of 89,674 patients presented to the emergency department in 50-day period in 2019 and 53,745 patients in the same period of time in 2020. Accordingly, the number of patients presenting to the

Table 1. Demographic characteristics of all patients who referred to the urology clinic.

	2019	2020	p
Gender			
Male	6032 (67.08)	947 (74.74)	<0.001
Female	2960 (32.92)	320 (25.26)	
Age group			
< 18 years	388 (4.31)	25 (1.97)	0.01
18-65 years	7147 (79.48)	1051 (82.95)	
> 65 years	1457 (16.2)	193 (15.23)	

p<0.05 significantly different by Chi-squared

emergency department of our hospital decreased by 40.07% within the same period of time compared to the previous year. In 2019, the mean age of the patients was 26.48±20.45 (min-max: 0-98) years old. Of all patients, 41,747 (46.55%) were male and 47,927 (53.45%) were female patients. In 2020, the mean age of the patients was 34.84±18.96 (min-max: 0-109) years. Of all patients presenting in 2020; 28,838 (53.66%) were male and 24,907 (46.34%) were female patients. Demographic features of the patients are given in Table 1. Distribution of the initial triage color codes in 2019 and 2020 is shown in Figure 1.

The percentage of patients with the green triage code was decreased in 2020 by 30% compared to 2019, while the percentage of yellow triage code was increased in 2020 by 28.9% compared to 2019. No significant change was observed in the percentage of red triage code. There was no statistically significant difference between 2019 and 2020 in terms of the final decision. In 2019, 8992 persons presented or were referred to the urology clinic. This figure was 1267 in 2020. There was a dramatic fall in urology

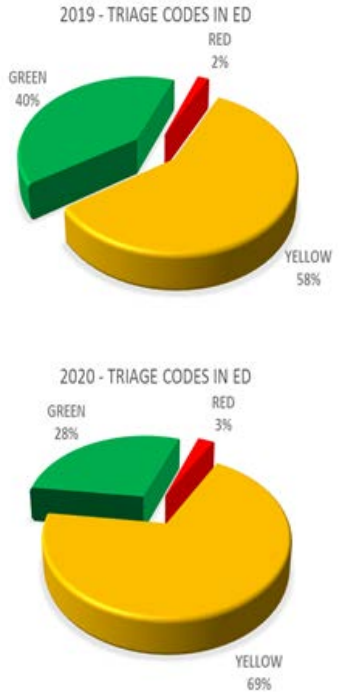

Figure 1. Distribution of the triage color codes in 2019 and 2020 in all patients who presented to the emergency department (p= 0.195).

visits in 2020 by 85.91%. The mean age of the patients presenting to the urology clinic in 2019 was 47.23±17.97 (min-max: 0-99) years, and the mean age of the patients presenting to the urology clinic in 2020 was 46.06±17.23 (min-max: 0-95) years. Female patients' ratio was significantly lower in 2020 than 2019, the percentage of patients under 18 ages in all patients decreased about 50% (Table 2).

Table 2. Details of patients who consulted from emergency to urology department.

	2019	2020	P value
Patients (n)	139	57	
Gender (m/f)	107/32	44/13	0.97
Mean age (years)± sd	50.4±30.4	53.2±20.5	0.52
Application time			
Day(07-18) n (%)	119 (85.6)	55 (96.5)	0.03
Night (18-07) n (%)	20 (14.4)	2 (3.5)	
Triage code			
Green n (%)	98 (70.5)	28 (49.1)	0.004
Yellow n (%)	35 (25.2)	28 (49.1)	
Red n (%)	6 (4.3)	1 (1.8)	
Final decision			
Discharged to home n (%)	113 (81.3)	49 (86)	0.48
Hospitalization n (%)	15 (10.8)	3 (5.3)	
Further diagnostic tests without hospitalization n (%)	11 (7.9)	5 (8.7)	

Table 3. Diagnosis of patients who were referred from emergency to the urology department.

	2019	2020
Patients (n)	139	57
Clinical diagnosis n (%)		
Severe LUTS	3 (2.2)	2 (3.5)
Penetrant urinary tract trauma	2 (1.4)	0
Renal Cancer Symptoms	2 (1.4)	1 (1.8)
Others	2 (1.4)	4 (7.0)
Epididymitis and/or Orchitis	16 (11.5)	5 (8.8)
Renal colic with pregnancy	2 (1.4)	4 (7)
Acute urinary retention	11 (7.9)	11 (19.3)
Gross hematuria	13 (9.4)	4 (7)
Uncomplicated UTI	11 (7.9)	2 (3.5)
Complicated UTI	1 (0.7)	3 (5.3)
Nephrostomy failure	3 (2.2)	0
Pelvic fracture with urinary tract trauma	4 (2.9)	1 (1.8)
Urethral, penile or scrotal infection	10 (7.2)	3 (5.3)
Post-renal acute renal insufficiency	6 (4.3)	1 (1.8)
Renal infarct or abscess	3 (2.2)	2 (3.5)
Urethral catheter or cystostomy failure	7 (5)	6 (10.6)
External genitalia trauma	2 (1.4)	1 (1.8)
Ureteral J stent symptoms	2 (1.4)	0
Testicular torsion	3 (2.2)	0
Renal colic	36 (25.9)	7 (12.3)

The number of consultations with the urology department decreased from 139 in 2019 to 57 in 2020. There was a 59% decrease in urologic consultation in 2020 compared to the same period of time in 2020. You can see details in table 2. Percentage of night consultation significance decreased and green code percentage was significantly lower in 2020 than 2019. Table 3 shows the diagnosis of patients who consulted the urology department. All diagnoses were compared using Chi-square test. No statistically significant difference was found between the number of diagnoses in 2019 and 2020 (p=0.1).

DISCUSSION

In the present study, we compared presentation parameters of the patients who presented or were referred to the urology clinic of our hospital in the same period of time with a one-year interval between 2019 and 2020. All studied parameters that indicate patient traffic were significantly decreased during the COVID-19 pandemic. Fear of getting infected by the new coronavirus and having COVID-19 disease prevent many patients from visiting other outpatient clinics or departments. In addition, “stay at home” motto was widely used in Turkey, especially during lockdowns affecting people’s intention to go to a hospital or any health center.

The most striking data is that the number of ED presentations decreased to 53,745 in 2020 from 89,674 in 2019. It means that ED visits decreased by 40.7% in 2020 compared with 2019. This large decline in patient health care service utilization during about two months of the pandemic indicated the significant impact of the COVID-19 pandemic on medical services. Kwok et al. reported a significant decline in ED visits immediately following formal declaration of the COVID-19 pandemic, with potential for delayed/missed presentations of time-sensitive emergencies (9). The reason of these significant decrease in presentations to the emergency departments may be explaine by the fear of getting infected by the coronavirus. This decline is observed in almost all medical disciplines. For example, Borrelli et al. reported a decrease in outpatient visit to a tertiary retina center. The authors believe that visits to the retina unit are expected to increase after the quarantine and, even more, after the pandemic (10). According to Moussa et al., urology practice was affected by the COVID-19. In Italy, patients with non-urgent conditions were deferred by a few months or prescriptions were sent electronically (11).

In our study, the percentage of male patients increased by 7.66%, while the percentage of female patients decreased by 7.66% in 2020 compared to 2019. In a study by Wang et al., the percentage of male patients also increased during the pandemic

(12). Probably, the reason why men apply to the ED more may be that they are subject to more exceptions from the lockdown and they continue to daily life at a higher rate. In a large-scale study by Chen et al. with 159 public hospitals in Shanghai, China; it was found that public hospitals experienced considerable losses in medical service and revenue during COVID-19 in 2020 (13). Similar results were reported from the USA and Germany (14, 15). In a study by Kaspner et al., with 18 German University hospitals, the overall inpatient hospital admissions decreased by 35% in weeks 1 to 4 and by 30.3% in weeks 5 to 8 after the lockdown announcement compared to 2018 (15). This situation is similar in our country. In a study by Kucukceran et al. the number of computed tomography pulmonary angiography has increased during the pandemic period compared to the pre-pandemic period (16). In another study again by Kucukceran et al. the number of patients presenting to the emergency department has decreased during the pandemic (17).

In the present study, the percentage of patients with the green triage code was decreased in 2020 by 30% compared to 2019, while the percentage of yellow triage code was increased in 2020 by 28.9% compared to 2019; however, it was not statistically significant. Especially the decrease in the percentage of yellow triage code might be attributed to the fear of getting infected by the virus (18). Similarly, in a study by Goksoy et al., the percentage of patients with a yellow triage code increased during the pandemic period and green-coded patients decreased relative to the non-pandemic period (19). This result indicates that patients with non-urgent conditions did not present to the hospital either due to the fear of being infected by COVID-19 or because of lockdowns. On the other hand, no significant difference was observed in red triage.

In our study, the percentage of emergency surgeries was 6/180 (3.33%) in the study period in 2019, while no emergency surgery was performed at the same period of time in 2020. This might be caused by hesitation of patients and postponing surgery due to declaration of lockdown and again fear of getting infected. In the study by Goksoy et al., a 25% reduction was observed in the number of surgical patients visiting the emergency department (19). The percentage of open surgery was 6.67% in 2019 and 9.52% in 2020 with a significant increase in open surgery during the COVID-19 pandemic. Goksoy et al. also stated that the percentage of open surgery increased during the pandemic period (19). Performing only emergency procedures during the pandemic and lockdown might cause an increase in more critical open surgeries that cannot be deferred.

We are concerned about the decrease in admissions to urology, especially those requiring hospitalization. Most of the renal colic patients who normally come to the emergency department did not come. Testicular torsion and orchitis disorders under the age of 18 were diagnosed lower in 2020. After returning to normal after quarantine, we saw atrophied kidneys due to delayed ureteric stone treatments, prolonged post-renal acute renal failure turned into chronic renal failure, and atrophied testicular torsion due to lack of timely admission.

Although the number of patients in our study is large, the single center nature of the study may be considered a limitation. Therefore, our results cannot be generalized to other pandemic hospitals. In addition, some patients may have gone to other hospitals they found less risky in terms of hygiene, social distancing and transmission. Finally, since we had no mortality data of the patients presenting to our hospital, we could not compare mortality rates. However, study results could provide contribution to what is known about the effect of COVID-19 on urology practice. Further multicentre, large scale prospective studies are needed to obtain generalizable findings.

CONCLUSION

The COVID-19 pandemic is still ongoing, and it seems likely to continue for some time, despite all efforts including vaccination programs and novel drugs will also become available in a short time. As in almost all medical fields, urology practice has been affected by the COVID-19 and changed. The pandemic underlines the importance of changing some aspects of urology practice from patient consultation to the triage of urological surgeries. The pandemic will lead to the development of new treatment guidelines. Urologists must prioritize the safety of their patients and healthcare staff. Telemedicine can be used as an alternative in this critical situation. It is important to evaluate changes in hospital visits during the COVID-19 pandemic in order to manage the post-pandemic period and prepare for future outbreaks.

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