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ORIGINAL ARTICLE
ORİJİNAL ARAŞTIRMA

Impact of the COVID-19 Pandemic on Cervical Cancer Screening; Experiences of a Tertiary Hospital

COVID-19 Pandemisinin Serviks Kanseri Taramasına Etkisi; Tersiyer Bir Hastanenin Deneyimleri

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ABSTRACT

Aim: To evaluate the number and outcomes of patients who underwent cervical cancer screening at our hospital before and during the pandemic and to demonstrate changes in rates of cervical cancer screening.

Material and Method: Patients presenting to the gynecology outpatient clinic between January 2018 and March 2022 were included in the study. The plan was to compare patients who attended cervical cancer screening in the pre-pandemic period (January 2018 to February 2020) and in the post-pandemic period (March 2020 to March 2022). Rates of regular cervical cancer screening were determined by calculating the total number of patients who enrolled before the pandemic and during the pandemic period.

Results: During the study period, a total of 50486 patients presented to the gynecology outpatient clinic, 6330 smears were taken, and 231 colposcopies were performed. Comparing the pre-pandemic and post-pandemic periods, the number of smears was statistically significantly lower in patients who presented to the outpatient clinic in the pre-pandemic period, while the number of patients who underwent colposcopy was statistically significantly higher. There was no significant difference between the histopathological results of the smear before and after the pandemic. There was no significant difference between the histopathologic results of patients who underwent colposcopy before and after the pandemic. However, it was found that smear histopathology results reported as "inadequate" increased in the post-pandemic period (p:0.002). Histopathology results of patients who underwent colposcopy did not differ significantly between time periods.

Conclusion: Cervical cancer is an important problem for women's health and each country has established its own routine screening program for cervical cancer. Routine screening is interrupted in situations such as pandemics. These interruptions can lead to an increased risk of cervical cancer in later years. To ensure that the routine screening program reaches the target population as soon as possible after the pandemic, new action plans should be established and the potential increase in cervical cancer risk prevented.

Keywords: COVID-19, colposcopy, pandemic, cervical cancer, smear test, screening

ÖZ

Amaç: Pandemi öncesi ve pandemi sırasında hastanemizde serviks kanseri taraması yapılan hasta sayısı ve sonuçlarını değerlendirmek ve serviks kanseri tarama oranlarındaki değişiklikleri ortaya koymaktır.

Gereç ve Yöntem: Ocak 2018 ile Mart 2022 tarihleri arasında jinekoloji polikliniğine başvuran hastalar çalışmaya dahil edildi. Pandemi öncesi dönem (Ocak 2018 ile şubat 2020) ile pandemi döneminde (mart 2020 ile mart 2022) servikal kanser taraması yapılan hastaların karşılaştırılması planlandı. Pandemi öncesi ile pandemi döneminde başvuru yapan toplam hasta sayıları hesaplanarak dönemsel olarak serviks kanser tarama oranlarının belirlendi.

Bulgular: Çalışma süresince jinekoloji polikliniğine başvuru toplam 50486 hastadan 6330 smear alındı ve 231 kolposkopi yapıldı. Pandemi öncesi ve pandemi sonrası dönemler karşılaştırıldığında pandemi öncesi dönemde polikliniğe başvuran hastalardan alınan smear sayısı istatistiksel olarak anlamlı derecede düşük, kolposkopi yapılan hasta sayısı ise istatistiksel olarak derecede yüksekti. Pandemi öncesi ve sonrası dönemlerde smear histopatoloji sonuçları arasında anlamlı fark yoktu. Ancak pandemi sonrası dönemde 'Yetersiz' olarak raporlanan smear histopatoloji sonuçlarının arttığı tespit edildi (p:0,002). Kolposkopi yapılan hastaların histopatolojik sonuçları zaman dilimleri arasında anlamlı farklılık göstermedi.

Sonuç: Serviks kanseri kadın sağlığı için önemli bir sorundur ve her ülke serviks kanseri için kendi rutin tarama şemasını belirlemiştir. Pandemi gibi durumlarda rutin taramalar aksamaktadır. Bu aksamalar ilerleyen yıllarda serviks kanser riskinin artmasına neden olabilir. Pandemi sonrası rutin tarama programının hedef kitleye bir an önce ulaşılabilmesi için yeni eylem planları oluşturulmalı ve olası serviks kanseri risk artışının önüne geçilmelidir.

Anahtar Kelime: COVID-19, kolposkopi, pandemi, serviks kanseri, smear, tarama

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INTRODUCTION

Since the World Health Organization (WHO) declared the new coronavirus that spread from China's Wuhan province a pandemic on March 11, 2020, more than 15 million cases have been diagnosed in Turkey and more than 560 million cases worldwide, and more than 6 million people have died (1). All areas of daily life, including health care, were affected by the pandemic. Routine or private health care was temporarily suspended as individuals were shunned, noncritical health problems were postponed, curfews were imposed, and existing health care workers were assigned to COVID -19 cases (2-4). Cancer screening programs, which offer early detection to people with cancers for which there is not yet a definitive cure, occupy an important place in the fight against this disease and make a significant contribution to public health. During the pandemic, timing changes in cervical cancer screening programs and interruptions in follow-up scheduled for screening led to a decrease in screening in the target population (5). Post-pandemic interventions must be carefully planned to reach the target population.

The purpose of this study is to evaluate the number and outcomes of patients who underwent cervical screening at our hospital before and during the pandemic and to show the change in rates of cervical screening.

MATERIAL AND METHOD

The records of cases in which smears and colposcopies were performed at the Department of Obstetrics and Gynecology, Tokat Gaziosmanpaşa University between January 2018 and March 2022 were retrospectively analyzed. The data for this retrospective cross-sectional case-control study were obtained from hospital records. It was approved by the Clinical Research Ethics Committee of Tokat Gaziosmanpaşa University (date: 26.05.2022, project number: 22-KAEK-122). It was planned to compare the patients who had undergone cervical cancer screening in the pre-pandemic period (January 2018 to February 2020) and in the pandemic period (March 2020 to March 2022). The aim was to evaluate the age of the patients, the indication for smear and/or colposcopy, the results of the smear and/or colposcopy, and the treatment of pathologic results. The objective was to determine regular rates of cervical cancer screening by calculating the total number of patients who enrolled before the pandemic and during the pandemic period. The inclusion criteria for the study were patients who had a pap smear and colposcopy performed at our hospital. As criteria for non-inclusion in the study: patients who were referred to our hospital with smear and/or colposcopy results from an external center were excluded from the study.

Statistical Analysis

Descriptive statistical methods (mean, standard deviation, median, frequency, ratio, minimum, maximum) were used in the analysis of study data. Comparison of study groups was performed using the test for significance of the difference between two percentages. When p-values below 0.05 were calculated, it was considered statistically significant. Minitab prepackaged statistical software was used for the calculations. (Ver.16 Minitab Inc, State College, PA)

RESULTS

Comparing the pre-pandemic and post-pandemic periods, the number of smears was statistically significantly lower in patients presenting to the outpatient clinic in the pre-pandemic period, whereas the number of patients undergoing colposcopy was statistically significantly higher. The demographic characteristics of patients before and after the pandemic are shown in **Table 1**.

Table 1. Demographic characteristics of the patients

	Pre-pandemic period [Mean age+St (min-max)]*	Post-pandemic period [Mean age+St (min-max)]*	p
Patient age from which the smear was taken	44,17±6,28 (21-88)	45,38±5,85 (22-96)	-
Age of patient Colposcopy performed	43,54±3,71 (23-66)	44,21±2,93 (23-67)	-
Number of patients with smear	2836	3494	<0,001†
Number of patients with performed colposcopy	154	77	<0,001†
Number of outpatient clinic requests	26529	23957	-

*: St: standard deviation,, min: minimum, max: maxium, †: p: Two Sample Proportions Test

There was no significant difference between the results of smear histopathology before and after the pandemic. However, there was a significant difference between the pre-pandemic and post-pandemic histopathology results reported as inadequate. Inadequate smear histopathology results after the pandemic were observed more frequently. The smear histopathology results of the patients are shown in **Table 2**.

Table 2. Results of the histopathological smear

Pathology result	Pre-Pandemic Period (n:2836)	Post-Pandemic Period (n:3494)	p
Normal	1868	2362	0,146
ASC-US	426	480	0,149
ASC-H	56	61	0,504
LSIL	291	325	0,202
HSIL	152	177	0,601
AGC	6	8	0,883
Insufficient	37	81	0,002*

*: p: Two Sample Proportions Test

There was no significant difference between the histopathologic results of patients who underwent colposcopy before and after the pandemic. It was noted that 154 patients had undergone colposcopy in the pre-pandemic period. The histopathologic results of these patients were reported as normal in 51, infection in 79, CIN-I in 17, CIN II-III in 5, and carcinoma in 2 patients. In the post-pandemic period, 77 patients underwent colposcopy. The histopathologic results of these patients were reported as normal in 35, infection in 30, CIN-I in 9, CIN II-III in 2, and carcinoma in one patient.

DISCUSSION

The pandemic COVID -19 has had a direct or indirect impact on people's physical and mental health, significantly affecting daily life in many ways. After global measures to contain the spread of the disease failed, proposals for social restrictions or ordinances and later curfews were introduced in many countries. Situations such as curfews and fear of infection have resulted in delayed or no requests for routine follow-up or even symptomatic illness at health facilities (6). Delayed requests for screening may result in individuals developing diseases at a more advanced stage than expected because of the delay. These diseases can be controlled with screening programs for the most common breast, cervical, and colorectal cancers (7). If treatment is delayed, say by six months, this can lead to an incurable state for many cancers (8-10). In addition, many simulation model studies predict that cancer-related mortality rates may be higher than expected in the future (11). This study shows that the number of patients presenting to a tertiary center for cervical cancer screening decreased between the pre-pandemic and post-pandemic periods. At our hospital, it was noted that the number of smears taken for screening and the number of colposcopies used to diagnose advanced lesions were significantly lower than in the pre-pandemic period. The number of cervical cancer screenings in the United States was found to be 35% lower after the relaxation of full closure than in the pre-pandemic period. Compared with the expected number of screenings calculated on the basis of previous years, a 67% shortfall was found. Although patient reluctance cannot be clearly identified, the limitation of preventive health services can be cited as a reason for this situation (12,13). A survey conducted in December 2020 among 1520 family physicians providing primary health care in 75 provinces (81 provinces) in Turkey found that the number of preventive examinations decreased by more than 90% during the pandemic (14). In a study by Ozsarı involving 114,727 people, it was found that screening for breast, colorectal, and cervical cancer had decreased by half compared with the pre-pandemic period, and when patients with a definitive cancer diagnosis by biopsy were evaluated, a 50% decrease was found in the number of people undergoing smear/HPV biopsy (15). In a study conducted by Erdoğan and Akkaya in Niğde Province, it was found that smear/HPV screening decreased during the pandemic period (16). In a study by Önal and Katırcı, it was found that colposcopic pathologic evaluations showed fewer normal and early lesions compared with advanced lesions, which increased as CIN3 during the pandemic period (2). In our study, no difference was observed between the histopathologic results of smear and colposcopy before and after the pandemic. However, it was found that the histopathologic result of smear, which was reported to be inadequate in the post-pandemic period, increased. It was suggested that the reason for this might be that health care workers tried to stay as far away from the patient as possible and take a smear quickly. During the pandemic, cervical cancer screenings were compromised, as with all cancer screenings. The American College of Obstetricians and Gynecologists (ACOG), the Italian Society for Colposcopy and Cervico-vaginal Pathology, and the British Society for Colposcopy and Cervical Pathology have announced their recommendations for triage and safe postponement. In light of this, the European Colposcopy Federation and the European Society of Gynecological Oncology have also published their considerations for cervical cancer screening. During the pandemic and in screening programs, treatment of screening-positive women and preinvasive and invasive lesions of the lower genital tract was recommended (10). Accordingly, it was recommended that high-risk groups and lesions be screened without delay and over a four-week period. Low- or no-risk groups were recommended to be screened over a period of 6 to 12 months.

CONCLUSION

Efforts should be made to reach the acceptable number of screenings by creating action plans for primary care workers for cervical screening programs that have declined due to the pandemic to reach the target population as soon as possible.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was approved by Tokat Gaziosmanpaşa University Clinical Research Ethics Committee (Date: 26.05.2022, Project No: 22-KAEK-122).

Informed Consent: Because the study was designed retrospectively, no written informed consent form was obtained from patients.

Referee Evaluation Process: Externally peer-reviewed.

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