http://www.cjmb.org

Open Access Original Article

Crescent Journal of Medical and Biological Sciences
Vol. 8, No. 2, April 2021, 90–92
eISSN 2148-9696

COVID-19 RT-PCR Test Results of Preoperative Gynecologic and Obstetric Patients in a Pandemic Hospital in Istanbul

Işık Kaban[1*], Besim Haluk Bacanakgil[1]

Abstract

Objectives: Our aim in the present study was to evaluate the results of the routine coronavirus disease 2019 (COVID-19) test performed preoperatively for gynecological and obstetric operations in asymptomatic patients and to question whether this test is necessary as a preoperative routine test after the pandemic declaration of the World Health Organization (WHO).

Materials and Methods: In the present study, the COVID-19 test results of all patients prepared for the gynecologic or obstetric operations between June 2020 and December 2020 were recorded.

Results: A total of 999 female patients were evaluated in this study. The mean age of the study group was 39.7±11.4 years. The average body mass index (BMI) was found to be 27.0 ± 3.9. In this study, 332 patients were pregnant (33.2%) and 251 patients (25.1%) were in the menopausal period. The COVID-19 test was found to be positive in 12 of 999 patients we performed preoperative screening (1.2%).

Conclusions: According to the results of this study, 1 positivity was found in 83 patients in the preoperative screening test. Although this rate is not high enough to suggest continuing screening, it seems beneficial to continue screening for COVID-19 to identify asymptomatic patients and reduce contagiousness.

Keywords: Coronavirus, Pandemics, Gynecology, Pregnancy

Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) appeared in China at the end of 2019 and became known as COVID-19 (coronavirus disease 2019) and spread rapidly all over the world. In March 2020, the World Health Organization (WHO) accepted this disease as a global problem and declared it a pandemic (1). According to our current knowledge, the spread of the virus mainly occurs through respiratory droplets. Although most people infected with the COVID-19 virus are asymptomatic or have mild symptoms, about 5% experience severe viral pneumonia.

The negative effects of this global pandemic continue in many different areas. In different regions of the world, there are interruptions in routine practices in the field of health or new special applications are emerging (2-5). In Turkey, elective surgical operations were suspended by the Ministry of Health on March 17, 2020. At the end of this process, which continued until June, elective surgical operations were resumed. In this period, real-time polymerase chain reaction (RT-PCR) test for COVID-19 was requested from patients for all surgical operations. In this study, test results over a 6-month period were analyzed. This study was conducted in a tertiary healthcare center in Istanbul, a region severely affected by COVID-19. We aimed to reveal the COVID-19 test results of asymptomatic patients who applied to our hospital for operation during the pandemic period and to discuss whether preoperative COVID-19 PCR testing is necessary.

Materials and Methods

For this study, firstly, a permit application was made to the Ministry of Health. The application was approved by the Ministry of Health Scientific Research Platform. After the permission of the Ministry, approval for the study was obtained from the local ethics committee (Date: 10.07.2020 No: 2475).

In the period from June 2020 to December 2020, the PCR results of all patients prepared for the operation were recorded. The PCR test was performed 1-3 days before the operation in the COVID-19 test room of the hospital. The samples from the patients were taken by trained personnel in the glass chamber test room. Samples were taken by swabbing the nose and throat with a sterile sampling stick. Surgeries of patients with positive test results were canceled. They were referred to the infectious diseases clinic for treatment and follow-up. Patients with negative test results were operated. All patients included in this study were asymptomatic and had no family history of the disease. According to the Ministry's decision, patients who were symptomatic or in contact with a positive family member were under quarantine. Since the study was performed in the obstetrics and gynecology clinic, all the patients were female.

Received 8 January 2021, **Accepted** 31 January 2021, **Available online** 1 February 2021

[1]Health Sciences University, Istanbul Training and Research Hospital, Gynecology and Obstetrics, Istanbul, Turkey.
***Corresponding Author:** Işık Kaban, Tel: +905057946228, Email: drisikkaban81@gmail.com

Key Messages

- This study highlights that screening for COVID-19 before elective surgical operations may be useful in today's pandemic environment, as it can detect virus carriers.

Results

A total of 999 female patients were evaluated in the study (Table 1). The mean age of the cases was 39.7±11.4 years. The average body mass index (BMI) was found to be 27.0±3.9. In this study, 332 patients were pregnant (33.2%), 251 patients (25.1%) were in the menopausal period. In the study, 116 women were identified with hypertension, 56 women with diabetes, and 8 women with cardiovascular diseases. 110 women (11%) were smoking. No women with chronic obstructive pulmonary disease were detected. Thirty-five (3.5%) patients had a history of malignancy. The number of patients who tested positive for COVID-19 in their family was 54 (5.4%). A total of 46 patients (4.6%) from this study population had previously suffered from COVID-19 disease and recovered. The COVID-19 test was found to be positive in 12 of 999 patients we performed preoperative screening (1.2%). Surgeries of these patients were canceled.

Postoperative Period

A total of 72 patients from this study population were infected with COVID-19 in the postoperative 3-month period, 17 of which were within the first 15 days. 3 of 72 patients who had the disease in the postoperative period died (4.1%). In this study, 4 patients had COVID-19 disease for the second time.

Table 1. Sociodemographic, clinical characteristics and laboratory results of the study population

Feature	Value
Age (year) Min-max; mean ±SD	16-77; 39.7 ± 11.4
Height (cm) Min-max; mean ±SD	145-178; 160.8 ± 4.8
Weight (kg) Min-max; mean ±SD	45-135; 69.9 ± 9.7
BMI (kg/m^{2}) Min-max; mean ±SD	17.6-56.1; 27.0 ± 3.9
Pregnancy (n, %)	332 (33.2%)
Menopause (n, %)	
Yes	251 (25.1%)
No	748 (74.9%)
Hypertension (n, %)	116 (11.6%)
Diabetes (n, %)	56 (5.6%)
Cardiovascular disease (n, %)	8 (0.8%)
COPD	-
Smoking (n,%)	110 (11.0%)
Malignity (n,%)	35 (3.5%)
Category for surgery	
Cesarean	321 (32.1%)
Gynecologic	678 (67.9%)
COVID-19 positivity in family (n,%)	54 (5.4%)
Had COVID-19 and recovered (n,%)	46 (4.6 %)
Preoperative test result positive (n,%)	12 (1.2%)
Positive in postoperative follow-up (n,%)	
Within 15 days	17 (1.7%)
Within 90 days	72 (7.2%)
Death from COVID-19	3 (0.3%)
Second time positive	4 (0.4%)

COPD, chronic obstructive pulmonary disease; BMI, body mass index; COVID-19, coronavirus disease 2019.

Discussion

COVID-19, caused by the SARS-CoV-2 virus, is a global disease that affects many different areas such as social life, economy, sports and health services. This novel coronavirus causes a variety of health problems such as pneumonia, myocardial dysfunction, acute respiratory distress syndrome, gastrointestinal diseases, kidney damage, disturbances in the sense of smell or taste, and ocular symptoms.

In this study, COVID-19 PCR test results, which are considered as a preoperative screening test in today's pandemic environment, were analyzed. This study consisted of women with no suspected COVID-19. The positivity rate was 1.2% as a result of preoperative screening. According to the value we found, should we continue to screen for COVID-19 in the current pandemic environment? This rate is not high enough to recommend continuing browsing. On the other hand, we cannot ignore the idea that the disease is rapidly contagious and its course may be more severe after operation stress? In fact, there is no clear recommendation due to the rapidly changing incidence and different disease courses in different regions.

The detection of COVID-19 conditions of patients before surgery has been mentioned in current literature (6–11). Kovoor et al stated that surgical patients with suspected COVID-19 should be screened before surgery (11). Tilmans et al emphasized that RT-PCR on nasopharyngeal swabs and chest CT can be applied as preoperative screening (12). Nekkanti et al emphasized that preoperative COVID-19 testing routinely is successful in identifying asymptomatic viral carriers and mandatory preoperative COVID-19 testing plays a beneficial role (9). Kannan et al in India applied the routine preoperative COVID-19 test to their patients and stated that 1 patient was positive in 45 patients (13). Ferrari et al recommended routine preoperative COVID-19 testing in their article (14). Myles et al detected 1 positivity in 833 patients in their study and stated that COVID-19 testing should be mandatory preoperatively even if the rate is low (15). In our study, this rate is 1 in 83 patients. NICE (National Institute for Health and Care Excellence) guideline (UK) suggested that perioperative protocols should be modified based on local or regional prevalence of COVID-19. According to this report, where there is high prevalence, asymptomatic patients should be tested as well as screened but in contrast, where there is low or no prevalence, asymptomatic patients may not need further testing before undergoing surgery (16). Therefore, there is no clear consensus on whether coronavirus testing is routine

as a preoperative screening test. The incidence varies from region to region and rate is generally low for a screening test. The disease incidence, which varies over time and by region, should also be taken into account.

Low-quality systematic reviews on this topic have recommended an RT-PCR test before surgery. These reports recommend that these tests be done the day before or 48-72 hours before. It does not seem possible to neglect the preoperative RT PCR test before starting the vaccination program in all age groups. Nowadays, the gold standard method for diagnosing COVID-19 is the RT-PCR test (real-time reverse transcriptase-polymerase chain reaction). However, it also has some limitations, such as the difficulty of testing a larger number of suspected patients, the need to maintain the cold chain, the occurrence of personnel related errors during the sampling process, and the longer time required to obtain test results (17,18).

Some of the limitations of this study are that the prevalence of the disease may differ in different regions of the world, so the statistics may differ and the current literature may constantly change due to the continuing development of information about the disease.

Conclusions

As a result, although the rate of 1 in 83 positivity seems to be not high enough to suggest continuing screening before for gynecological and obstetric operations, it may be still logical to continue screening for COVID-19 to identify asymptomatic patients and reduce contagiousness.

Our current knowledge is that a significant part of people with COVID-19 positive are asymptomatic. These carriers play the most important role in the continuation of the pandemic. A virus carrier undergoing surgery is a transmission source for hospital staff and other patients in a closed operating room environment. The detection of these carriers by preoperative screening and taking the necessary precautions contribute to the control of the epidemic.

Authors' Contribution

Conception and design: IK and BHB; Data collection: IK; Manuscript writing: IK; Final approval of manuscript: IK and BHB.

Conflict of Interests

The authors declare that there is no conflict of interest.

Ethical Issues

Ethical approval for the study was obtained from the local ethics committee (Date: 10.07.2020 No: 2475).

Financial Support

None.

References

1. Sohrabi C, Alsafi Z, O'Neill N, et al. World Health Organization declares global emergency: a review of the 2019 novel coronavirus (COVID-19). Int J Surg. 2020;76:71-76. doi:10.1016/j.ijsu.2020.02.034
2. Velavan TP, Meyer CG. The COVID-19 epidemic. Trop Med Int Health. 2020;25(3):278-280. doi:10.1111/tmi.13383
3. Ahn DG, Shin HJ, Kim MH, et al. Current status of epidemiology, diagnosis, therapeutics, and vaccines for novel coronavirus disease 2019 (COVID-19). J Microbiol Biotechnol. 2020;30(3):313-324. doi:10.4014/jmb.2003.03011
4. Kurdoğlu Z. Combined hormonal contraceptive usage in women with COVID-19. Int J Womens Health Reprod Sci. 2021;9(2):84-85. doi:10.15296/ijwhr.2021.15
5. Kurdoğlu M, Khaki A. What is the current state of knowledge about the novel coronavirus infection during pregnancy? Int J Womens Health Reprod Sci. 2020;8(2):110-111. doi:10.15296/ijwhr.2020.17
6. Mouton C, Hirschmann MT, Ollivier M, Seil R, Menetrey J. COVID-19-ESSKA guidelines and recommendations for resuming elective surgery. J Exp Orthop. 2020;7(1):28. doi:10.1186/s40634-020-00248-4
7. Gökce M, Yin S, Sönmez MG, et al. How does the COVID-19 pandemic affect the preoperative evaluation and anesthesia applied for urinary stones? EULIS eCORE-IAU multicenter collaborative cohort study. Urolithiasis. 2020;48(4):345-351. doi:10.1007/s00240-020-01193-8
8. Elkoundi A, Jaafari A, Ababou M, Boubekri A, Baite A, Bensghir M. Preoperative assessment organization in the time of the outbreak COVID-19. J Clin Anesth. 2020;65:109882. doi:10.1016/j.jclinane.2020.109882
9. Nekkanti SS, Vasudevan Nair S, Parmar V, et al. Mandatory preoperative COVID-19 testing for cancer patients-Is it justified? J Surg Oncol. 2020;122(7):1288-1292. doi:10.1002/jso.26187
10. Velly L, Gayat E, Quintard H, et al. Guidelines: anaesthesia in the context of COVID-19 pandemic. Anaesth Crit Care Pain Med. 2020;39(3):395-415. doi:10.1016/j.accpm.2020.05.012
11. Kovoor JG, Tivey DR, Williamson P, et al. Screening and testing for COVID-19 before surgery. ANZ J Surg. 2020. doi:10.1111/ans.16260
12. Tilmans G, Chenevas-Paule Q, Muller X, et al. Surgical outcomes after systematic preoperative severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) screening. Surgery. 2020;168(2):209-211. doi:10.1016/j.surg.2020.05.006
13. Kannan NB, Sen S, Reddy H, Kumar K, Rajan RP, Ramasamy K. Preoperative COVID-19 testing for elective vitreoretinal surgeries: experience from a major tertiary care institute in South India. Indian J Ophthalmol. 2020;68(11):2373-2377. doi:10.4103/ijo.IJO_2870_20
14. Ferrari M, Paderno A, Giannini L, et al. COVID-19 screening protocols for preoperative assessment of head and neck cancer patients candidate for elective surgery in the midst of the pandemic: a narrative review with comparison between two Italian institutions. Oral Oncol. 2021;112:105043. doi:10.1016/j.oraloncology.2020.105043
15. Myles PS, Wallace S, Story DA, et al. COVID-19 risk in elective surgery during a second wave: a prospective cohort study. ANZ J Surg. 2020. doi:10.1111/ans.16464
16. National Institute for Health and Care Excellence (NICE). COVID-19 Rapid Guideline: Arranging Planned Care in Hospitals and Diagnostic Services. London, UK: NICE; 2020. NICE Guideline, No. 179
17. Shi H, Han X, Jiang N, et al. Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. Lancet Infect Dis. 2020;20(4):425-434. doi:10.1016/s1473-3099(20)30086-4
18. Ai T, Yang Z, Hou H, et al. Correlation of chest CT and RT-PCR testing for coronavirus disease 2019 (COVID-19) in China: a report of 1014 cases. Radiology. 2020;296(2):E32-E40. doi:10.1148/radiol.2020200642