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Psychological conditions of patients whose infertility treatment was postponed due to the novel coronavirus pandemic lockdown

Yeni Koronavirüs Salgını Kapanma Süreci Nedeniyle İnfertilite Tedavisi Ertelenen Hastaların Psikolojik Durumları

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ABSTRACT

Aim: In this study, we planned to examine the psychological status of patients who were required to postpone their infertility treatment, by means of an online survey.
Methods: Sixty patients who were in the follow-up were informed and an access link of online survey, which included questions about age, infertility status, Beck's depression inventory(BDI) and Hamilton's anxiety rating scale (HAM-A), were sent to them. Three different grouping systems were used based on (i-) age, (ii-) fertility treatment status and (iii-) indications for assisted reproduction technology treatment.
Results: Mean scores of BDI and HAM-A in the whole group were 39.2(25-67) and 22.1(11-45), respectively. In the evaluation of survey scores according to indications of fertility treatment, BDI scores were between 34.2-44.7 and there was no statistical significance between the groups (p:0.182). HAM-A scores were between 18.7-38.0 and there was no statistical significance between the groups (p:0.185). In addition, there was no statistical significance between groups for BDI and HAM-A (p: 0.962 and 0.423, respectively) according to patients' ART treatment status at the time the 2019-nCoV outbreak began in our country.
Conclusion: Infertile patients will be more prone to depression and anxiety, and it should be noted that potential treatment postponements may increase their depression and anxiety.

Keywords: Coronavirus, Beck's depression inventory, Hamilton anxiety rating scale, infertility

ÖZ

Amaç: Bu çalışmada infertilite tedavisi ertelenen hastaların psikolojik durumlarını online anket aracılığıyla incelemeyi planladık.
Yöntemler: İnfertilite nedeniyle takipte olan 60 hasta anket ile ilgili bilgilendirildi. Yaş, infertilite durumu, Beck depresyon envanteri (BDI) ve Hamilton anksiyete derecelendirme ölçeği (HAM-A) ile ilgili soruları içeren çevrimiçi anketin erişim linki gönderildi. Hastalar (i-) yaş, (ii-) fertilite tedavi durumu ve (iii-) yardımcı üreme teknolojisi (YÜT), tedavisi endikasyonlarına göre üç farklı gruplama sistemi kullanıldı.
Bulgular: Tüm grupta ortalama BDI ve HAM-A skorları sırasıyla 39.2 (25-67) ve 22.1 (11-45) idi. Fertilite tedavisi endikasyonlarına göre anket puanlarının değerlendirilmesinde BDI puanları 34,2-44,7 arasında idi ve gruplar arasında istatistiksel anlamlılık yoktu (p: 0,182). HAM-A skorları 18,7-38,0 arasında idi ve gruplar arasında istatistiksel anlamlılık yoktu (p: 0,185). Ayrıca, 2019-nCoV salgını ülkemizde başladığında hastaların YÜT tedavi durumuna göre BDI ve HAM-A için gruplar arasında istatistiksel olarak anlamlı bir fark yoktu (sırasıyla p: 0.962 ve 0.423).
Sonuçlar: İnfertil hastalar depresyon ve anksiyeteye daha yatkındır ve olası tedavi ertelemelerinin depresyon ve anksiyetelerini artırabileceği unutulmamalıdır.

Anahtar Kelimeler: Koronavirüs, Beck depresyon envanteri, Hamilton anksiyete derecelendirme ölçeği, infertilite

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INTRODUCTION

The 2019 novel coronavirus (2019-nCoV), also known as nCoV or COVID-19 is caused by a new strain of coronavirus (SARS-CoV-2) that was discovered in 2019[1]. The outbreak of COVID-19, which spread rapidly in China and then around the world since it was first seen, was recognized as a pandemic by the World Health Organization (WHO) on March 11 [http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-COVID-19/news/news/2020/3/who-announces-COVID-19-outbreak-a-pandemic]. There are currently more than six million confirmed cases worldwide (data from June 2, 2020) and the numbers are growing rapidly every day.

According to the scientific data, the risks of 2019-nCoV during pregnancy are no greater than the risks that may occur when non-pregnant women acquire this infection [2-3]. However, because the number of cases is very small and the infection is relatively new, the risks that 2019-nCoV will pose to the health of the mother and baby are not yet clear [4-6]. Therefore, there are still many questions about the postponement of new pregnancies during the pandemic period.

While there are many questions about the postponement of new pregnancies, questions have begun to emerge about how to follow a path in infertility treatments during the pandemic period. When contemplating this issue, it was necessary to approach it from a few different angles. During the application of assisted reproductive technologies, if the patient suffered from febrile disease during the embryo transfer period, patient would not have conceived and this might have been also teratogenic [7]. In addition, out-of-town patients were required to travel to the treatment center during the treatment period, and as a result, they were more likely to acquire 2019-nCoV if social distancing and individual hygiene were neglected [8]. Another angle is that immunity might have been affected by the procedures that would be applied to patients during the treatment process, and as a result they might face more serious consequences of a possible infection. In light of all this information, the European Society of Human Reproduction and Embryology (ESHRE) recommended on March 14, 2020 that infertility treatments be postponed: “As a precautionary measure - and in line with the position of other scientific societies in reproductive medicine - we advise that all fertility patients considering or planning treatment, even if they do not meet the diagnostic criteria for 2019-nCoV infection, should avoid becoming pregnant at this time. For those patients already having treatment, we suggest considering deferred pregnancy with oocyte or embryo freezing for later embryo transfer.” [https://www.eshre.eu/Press-Room/ESHRE-News]. On March 17th, 2020, the American Society for Reproductive Medicine (ASRM) published a guidance document on fertility care during the COVID-19 pandemic, calling for suspension of new treatment cycles, cancellation of all embryo transfers and suspension of elective surgeries [https://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/COVID-19/COVIDtaskforce.pdf]. As a result of these recommendations, treatments in our center and all over Turkey have been postponed.

After these decision were taken, it was not known how the psychological condition of this group of patients would be affected. Therefore, in this study, we planned to examine the psychological status of patients who experienced a postponed infertility treatment, by means of an online survey.

MATERIAL AND METHOD

This survey study was conducted online at Başkent University Faculty of Medicine, Department of Infertility and Reproductive Endocrinology, between April 19th and 25th, 2020. Patients who were in the follow-up of our Assisted Reproduction Technology (ART) Center were informed about the survey and the access link to the online survey, which included questions about age, infertility status, Beck’s depression inventory (BDI) and the Hamilton anxiety rating scale (HAM-A), were sent to them. Sixty patients completed the survey on a voluntary basis. The study protocol was approved by both the Institutional Ethics Committee and the Ministry of Health and it was performed in accordance with the ethical standards described in an appropriate version of the 1975 Declaration of Helsinki, as revised in 2000.

Beck’s depression inventory contains 21 items on a 4-point scale from 0 to 3 (absent to severe

symptoms). The minimum score is 0 and maximum score is 63. Hamilton's anxiety rating scale consists of 14 items aiming to measure psychic and somatic anxiety on a scale of 0 to 4 (absent to severe), with a total score range 0 to 56. Higher scores indicate greater symptom severity.

Three different grouping system was used based on (i-) age (25-29; 30-34; 35-39; ≥40), (ii-) fertility treatment status (prior failed assisted reproduction technology treatment/treatment was delayed; the preparation of first assisted reproduction technology treatment; prior failed assisted reproduction technology treatment/preparation was delayed; thawed embryo transfer was delayed; treatment began/embryos were thawed) and (iii-) indications for assisted reproduction technology treatment (diminished ovarian reserve; endometrioma and normal ovarian reserve; endometrioma and diminished ovarian reserve; male factor; polycystic ovary syndrome and anovulation; unexplained infertility).

Statistical analyses of the study results were performed using the SPSS v.15.0 (Statistical Package For Social Sciences, Chicago, IL, USA) packaged software. Frequency analyses were performed. The Shapiro-Wilk W test was used to evaluate the distribution of the groups. Since the distribution was not homogeneous for age, IVF indication and status of IVF, the Games-Howell post hoc test was used to evaluate the differences between the groups in a One-Way ANOVA analysis. A P value of < 0.05 was considered statistically significant.

RESULTS

The study included sixty patients. The number of patients under 35 and ≥35 years old were 37 (61.7%) and 23 (38.3%), respectively. The mean scores of BDI and HAM-A in the entire group were 39.2 (25-67) and 22.1 (11-45), respectively.

In the evaluation of the survey scores with regard to age, there was no statistical significance between groups for BDI and HAM-A (p: 0.778 and 0.993, respectively). Mean BDI scores were between 37.0-40.5 and the highest score was in the ≥40 years old age group. HAM-A scores were very similar between all groups with a range of 20.0-22.4.

The most frequent indications of ART treatment were diminished ovarian reserve (DOR), endometrioma with normal ovarian reserve (NOR) and endometrioma concomitant with DOR, with a distribution of 20 (32.8%), 14 (23.0%) and 13 (21.3%), respectively. BDI scores were in the range of 34.2-44.7 and there was no statistical significance between the groups (p:0.182). HAM-A scores were in the range of 18.7-38.0 and there was no statistical significance between the groups (p:0.185). The results of surveys according to indications of fertility treatment were shown in Table 1.

Table 1. Beck's depression inventory (BDI) and Hamilton anxiety rating scale (HAM-A) according to indications for assisted reproduction technology treatment

Assisted Reproductive Technologies treatment indication	n	BDI Score	P	Hamilton Score	P
DOR	20	38.5±8.4	0.182	21.5±6.7	0.185
Endometrioma and NOR	14	39.0 ±11.8		22.6±8.6	
Endometrioma and DOR	13	44.7±7.2		22.6±6.4	
Male factor	9	34.2±6.6		0.182	
PCOS/anovulation	3	38.3±9.8		25.0±7.8	
Unexplained infertility	1	36.0		38.0	

DOR: Diminished ovarian reserve, NOR: Normal ovarian reserve, PCOS: Polycystic ovary syndrome, BDI: Beck's depression inventory

Table 2 shows survey results according to patients' ART treatment status when the 2019-nCoV outbreak began in our country. There was no statistical significance between groups for BDI and HAM-A (p: 0.962 and 0.423, respectively). Mean BDI scores were between 38.4-41.3 and the highest BDI score was in the patients who had prior ART history and at the evaluation phase for the next IVF treatment. HAM-A score was also highest in the same group (25.0).

DISCUSSION

In this study, we aimed to assess the psychological status of patients who experienced a postponement of their infertility treatment. Although we did not find any statistical difference in BDI and HAM-a scores among the groups, we found that BDI and HAM-a scores of all infertile patients were higher than the previous studies conducted in our infertility center and the other center in Turkey [9-11] (Table 3).

Table 2. Beck's depression inventory (BDI) and Hamilton anxiety rating scale (HAM-A) according to fertility treatment status at the beginning of 2019 Novel Coronavirus Pandemic

Status of fertility treatment at the beginning of 2019 Novel Coronavirus pandemic	n	BDI Score	p	Hamilton Score	p
Prior failed assisted reproduction technology treatment/ Treatment was delayed	19	38.6±7.5		22.4±6.3	
The preparation of first assisted reproduction technology treatment	14	39.2±10.7		20.6±7.4	
Prior failed assisted reproduction technology treatment/ Preparation was delayed	10	41.3±4.7	0.962	25.0±6.8	0.423
Thawed embryo transfer was delayed	10	39.2±11.2		19.4±6.6	
Treatment began/Embryos were thawed	7	38.4±13.4		23.7±10.1	

ET: Embryo transfer, BDI: Beck's depression inventory

Table 3. BDI scores in Turkish women – A comparison with before 2019 Novel Coronaviruspandemic [10-12]

Study	Study Design	Study Cohort	Study aim	BDI Score		Conclusion
				Infertile women	Fertile women	
Ozturk et al. (2019)	Cross sectional and comparative study	Infertile women vs fertile women	Compare to depression and anxiety level of Turkish infertile and fertile women	11.5 ± 9.7	9.9 ± 9.0	The BDI total scores did not significantly differ
Pinar et al. (2012)	Cross sectional study	Infertile couple vs fertile women	Compare to depression and anxiety level of Turkish infertile and fertile women	25.00± 11.58	19.87 ± 9.78	a higher prevalence of depression and anxiety in the infertile group
Erdem et al. (2014)	Descriptive and sectional study	Turkish infertile women	Determine the relationship between perceived social support and depression in infertile women	12.55 ± 8.07		Symptoms of depression decreased as the women's perceived social support increased.
Current study	Online survey study	Turkish infertile women patients who are postponed of treatment	Examine the psychological status of patients who are postponed of infertility treatment due to pandemic	39.2 ± 9.19		Possible treatment postponements may increase their depression

BDI: Beck's depression inventory

Infertility is a major predicament that may cause stress in human life [12,13]. In the literature, there have been many studies examining the association between depression / anxiety and infertility, and these studies have shown that infertile women had higher scores on the depression and anxiety scales than those the control group [11,14,15]. It has been reported that there are several risk factors which may cause depression in infertile patients, including female gender, repeated treatment cycles, unsuccessful treatments, a low socioeconomic state, lack of a partner's support for women, previous depression, and the long duration of infertility [14,16,17] and even patients may apply experimental treatment approaches [18]. As a result, infertility and treatment process of these patients are considered as a cumulative trauma. Therefore, any disruption of the treatment, for any reason, including financial problems, loss of hope as a result of unsuccessful treatment, lack of response during treatment that may occur in the treatment processes, may be an additional source of stress. In addition to these factors, the postponement of infertility treatments and a nationwide lockdown caused fear, anxiety and loss of hope in the patients, as we were made aware of through messages and telephone calls received from the patients. Therefore, we planned this study to measure the depression and anxiety of these patients in this process and applied the BDI and HAM-a to patients who agreed to be involved in the study. As a result, we found higher scores in BDI and HAM-a, in patients included in this study, than those reported in infertile patients in the literature [9-11] (Table 3).

CONCLUSION

Infertile patients go through a stressful period in their treatment process. Therefore, when planning treatments for these patients, it should be kept in mind that they will have an increased propensity for depression and anxiety, and it should be noted that potential treatment postponements may increase their depression and anxiety. Remaining connected with patients through the use of text messages, live broadcasts and online video messaging may encourage and direct the patients to adapt to these challenging times.

Limitations

The present study had some limitations, including a low number of patients, lack of control groups and lack of depression and anxiety scores of patients prior and after the pandemic, which is ongoing. However, considering that this pandemic process was an extraordinary event, it was problematic to obtain BDI and HAM-A scores before and after the pandemic, as the survey was performed at the time of the lockdown. Therefore, we compared the scores we obtained in our study with previous studies in infertile patients in the literature. Despite these limitations, this is to the best of our knowledge, the first and only study on this topic.

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