Acta Medica Alanya

Research Article

Araştırma

Acta Medica Alanya 2023;7(3): 232-237
Doi: 10.30565/medalanya.1384162

Lessons Learned From Covid-19 Pandemia: Pregnancy Anxiety Level Increases During A Life Threatening Period

Kovid-19 Pandemisinden Öğrenilen Dersler: Hayatı Tehdit Eden Bir Dönemde Gebelik Kaygı Düzeyi Artıyor

Emre Köle[1], Lale Aksoy[2], Gökşen Görgülü[3], Hakan Demir[4], Merve Çakır Köle[1], Erdoğan Aslan[1]

[1] Department of Obstetrics and Gynecology, Antalya Education and Research Hospital, Antalya, Turkey

[2] Department of Obstetrics and Gynecology, Geyve State Hospital, Sakarya, Turkey

[3] Department of Obstetrics and Gynecology, Tepecik Education and Research Hospital, İzmir, Turkey

[4] Department of Obstetrics and Gynecology, Zonguldak Obstetrics and Gynecology State Hospital, Zonguldak, Türkiye

ABSTRACT

Introduction: We aimed to highlight the psychological effects of the disease in the pandemic process along with the epidemiological data in pregnant women with COVID 19 infection, and the effects of increased anxiety in pandemic on pregnancy outcomes.

Material and Methods: This study was performed in 100 women of 15 to 49 years of reproductive age who applied to the Gynecology and Obstetrics Outpatient Clinic, Pandemic Outpatient Clinic and the Pregnant Outpatient Clinic. Fourty-six pregnant women with positive COVID 19 PCR test were compared with negative COVID 19 PCR test as control group. Patients were administered a questionnaire and Beck Anxiety Inventory.

Results: An evaluation using the Beck Anxiety Scale revealed that anxiety levels were significantly higher in the COVID-19 positive pregnant group compared to the COVID-19 negative pregnant group (p=0.001). When comparing the groups in terms of becoming pregnant and giving birth during the pandemic, it was found that "severe anxiety" significantly increased in the COVID-19 negative pregnant group (p=0.032)

Discussion: We found that being COVID-19 positive, based on the Beck Anxiety Inventory, significantly increased the anxiety levels during pregnancy when compared to negative groups.

Key Words: anxiety, pandemia, pregnancy,COVID19, mental health

ÖZET

Giriş: Bu çalışmada, COVID-19 enfeksiyonlu hamile kadınlardaki epidemiyolojik verilerle birlikte, pandemi sürecinde hastalığın oluşturduğu psikolojik etkileri ve pandemide artan anksiyetenin gebelik sonuçlarına etkilerini vurgulamayı amaçladık.

Materyal ve Yöntemler: Bu çalışma,15 ila 49 yaşlarındaki 100 kadında gerçekleştirildi ve katılımcılar, Kadın Hastalıkları ve Doğum Polikliniği, Pandemi Polikliniği ve Gebelik Polikliniği'ne başvuranlardan seçildi. Kırk altı COVID-19 pozitif gebe kadın, kontrol grubu olarak negatif COVID-19 PCR testi olanlarla karşılaştırıldı. Katılımcılara bir anket ve Beck Anksiyete Envanteri uygulandı.

Bulgular: Beck Anksiyete Envanteri kullanılarak yapılan bu çalışmada COVID-19 pozitif gebe grubunda anksiyete düzeylerinin COVID-19 negatif gebe grubuyla karşılaştırıldığında anlamlı derecede yüksek olduğunu gösterildi (p=0.001). Gruplar, pandemi sırasında gebe kalma ve doğum yapma açısından karşılaştırıldığında, "şiddetli anksiyete" nin COVID-19 negatif hamile grubunda anlamlı derecede arttığı bulundu (p=0.032).

Tartışma: Beck Anksiyete Envanterine dayalı olarak, COVID-19 pozitif olanların negatif gruplarla karşılaştırıldığında gebelik sırasında anksiyete düzeylerini anlamlı derecede artırdığını tespit ettik.

Anahtar Kelimeler: Adeziv kapsülit; rotator manşet yırtığı; lenfosit-monosit oranı

Recieved Date: 31.10.2023 / **Accepted Date:** 16.11.2023 / **Published (Online) Date:** 31.12.2023

Corresponding author: Emre Köle, MD. Alanya Alaaddin Keykubat University School of Medicine, Antalya, Turkey Address: Kestel, Karapınar Caddesi 07450 Alanya/Antalya
Phone: +90 (530) 9221337 / **mail:** emre.kole.41@gmail.com
ORCID: 0000-0002-4940-8862

To cited: Köle E, Aksoy L, Görgülü G, Demir H, Çakır Köle M, Aslan E. Lessons Learned From Covid-19 Pandemia: Pregnancy Anxiety Level Increases During A Life Threatening Period. Acta Med. Alanya 2023;7(3): 232-237 doi: 10.30565/medalanya.1384162

Acta Medica Alanya 2023;7(3): 232-237
Doi: 10.30565/medalanya.1384162

Introduction

In December 2019 a new coronavirus infection, which was first described in Wuhan, China, also showed its effect in our country. Our first case was detected on 11.03.2020, and according to current data, approximately 140 thousand cases have been followed since then. In the light of up-to-date official data worldwide, nearly 4.5 million infected people and nearly 300,000 deaths have occurred in the COVID 19 pandemic for now. The number of infected pregnant women and the number of maternal deaths remained unknown because of heterogenity of data and global scale of disease spread.[1, 2, 3, 4, 5, 6]

In recent years, it is known that some mental diseases can be seen frequently in pregnancy. Depression and anxiety in pregnant women are the leading pshycological pathologies which are observed more frequently when compared with general population.[7, 8] Antenatal anxiety is more prevalent than depression with, serious maternal and fetal consequences.[9] Maternal anxiety is related to maternal sociodemographic properties such as age of mother, marital status, children number, education level, history of smoking, alcohol and substance use, and if the pregnancy was planned or not.[10] Anxiety symptoms during pregnancy leads to increased the rate of fear of vaginal delivery and a preference for cesarean section.[11] Also, prenatal anxiety has been recognized as a potential etiology that may lead to preterm birth and low birth weight.[12] Consequently, anxiety during pregnancy was found to be associated with poor neonatal outcomes, and pregnant women should therefore be screened for anxiety and, be informed about the risks.[13, 14]

Due to the rapid and easy transmission of infection during the global pandemic period, most countries implemented socially restrictive measures such as isolation and quarantine. Those measures inevidently caused to exacerbate preexisting mental illnesses and, caused emergence of new symptoms. Many countries therefore planned psychosocial support programs especially for pregnant women in their health policies following such a large scale catastrophy.[15, 16]

We aimed to highlight the psychological effects of the disease in the pandemic process along with the epidemiological data in pregnant women with corona virus infection, and the effects of increased anxiety in pandemic on pregnancy outcomes.

As the emergence of new subtypes of Corona virus is being noticed now and then, the public memories of recent pandemics is kept alive. There are crucial lessons to be learned from such a heavy experience world-wide including prevention of transmission, reflex responses for such threats and preventive measures such as vaccines. However, a special subgroup of susceptible patients such as pregnant women should not be forgotten, and their mental wellbeing be considered

Material and Methods

This prospective case-control study was conducted, Department of Obstetrics and Gynecology with approval from the local ethics committee. The study was designed in accordance with the guideline devised by the World Medical Association (Helsinki), and written informed consent was obtained from the participating women.

This study was performed in 100 women of 15 to 49 years of reproductive age who applied to the Gynecology and Obstetrics Outpatient Clinic, Pandemic Outpatient Clinic and the Pregnant Outpatient Clinic. The study patients were selected sequentially, understood Turkish and consented to participate. Lack of understanding Turkish, previous history or presence of medical and psychiatric problems that may interfere with capability of interviewing were accepted as exclusion criteria.

Fourty-six pregnant women with positive COVID 19 PCR test were compared with negative COVID 19 PCR test as control group. Patients were administered a questionnaire and Beck Anxiety Inventory. Data on socio-demographic parameters such as age, education, employment status, literacy status and marital status were gathered. At the same time, also information about the patient's height, weight, BMI, chronic disease history, smoking and alcohol use history, drug and substance abuse history, and previous surgery history, and, information about the current pregnancy, still births or fetal congenital abnormalities, gravidity, parity, miscarriages, number of surviving children, gestational week and trimester, reason for admission to the hospital and type of delivery were recorded. We also reported hemogram, white blood cells, neutrophil and platelet levels, vital signs which were fever, pulse, blood pressure and oxygen saturation level. Data about the infant concerning the gestational age, gender, birth weight, APGAR scores, hospital admission or neonatal death were collected.

At the same time, a questionnaire consisting of two questions was applied to the patients and they were asked to score their anxiety levels between 0-10. These questions were

"Do you worry that you have to give birth or become pregnant during the COVID 19 pandemic?" and " Do you worry about having an examination or giving birth at Pandemic hospital?" Beck Anxiety Inventory to investigate anxiety in patients (BAI) has been implemented. This survey contains 21 items consists of somatic and cognitive anxiety, complaints a

likert type questioner, such as "shakiness in legs," "scared," and "worry of losing control, and scored between 0 and 3 scale, maximum score 63, cut-off score 17 is considered as. Based on the total score, 8-15 points, 16-25 points and, 26-63 points represent mild, medium and, severe levels of anxiety respectively. Beck's Anxiety Inventory Turkish validity and reliability was made by Ulusoy and friends.[17, 18]

The statistical analyses were performed with SPSS (Version 22, SPSS Inc, Chicago, IL, USA). Chi-square tests were used to show differences in categorical variables and Student's t-test were used to evaluate differences in the continuous variables for paired groups. BAI scores of patients were analysed with Spearman correlation analysis. The p value was taken as <0,05 for statistical significance. In the analysis, anxiety scores and COVID 19 infection were considered as dependent variables and age, occupation status, education level, gravidity, and BMI were considered as independent variables.

Results

In the study, 54 pregnant women who tested positive for COVID-19 by PCR and 46 pregnant women who tested negative for COVID-19 were included. Demographic characteristics of the two groups were similar (Table 1). In the COVID-negative group, the most common reason for hospital admission was contractions, while in the COVID-positive group, the most common reason was cough/dyspnea (Table 2).

An evaluation using the Beck Anxiety Scale revealed that anxiety levels were higher in the COVID-19 positive pregnant group compared to the COVID-19 negative pregnant group (p=0.001) (Table 3). When comparing the groups in terms of becoming pregnant and giving birth during the pandemic, it was found that "severe anxiety" significantly increased in the COVID-19 negative pregnant group (p=0.032) (Table 4).

However, when evaluated in terms of receiving medical examinations or giving birth at the pandemic hospital, the anxiety levels of both groups were not different (p=0.259) (Table 5).

Discussion

The anxiety levels were reported to be increased in a systematic review by Yuan et al. In their study they analyzed the data obtained from a heterogenous group of population consisting of general public, health workers, university students, older adults, infected patients, survivors of infection, and pregnant women were analyzed for anxiety levels during infectious disease epidemics. The anxiety levels were highest in pregnant women during epidemics.[19]

In another study done by Zilver et al. the fear of childbirth in pregnant women during the pandemic was compared with a reference group from before the pandemic in Netherlands.[20] Surprisingly, they concluded that the fear of childbirth was not increased during he pandemic. Such a finding can be secondary to the trust of population on the healthcare infrastructure of a developed country such as Netherlands. However, a study conducted in Turkey by Ayaz et.al indicated that the anxiety levels and depression symptoms of pregnant women during the pandemic was found to be significantly increased which is parallel to our findings.[21] In our study COVID-19 positive pregnant women had significantly higher anxiety levels when compared to COVID negative pregnant women. Limitations of the study; Depending on religion, ethnicity, family structure, belief factors, anxiety levels may change. At the same time, determining anxiety types and the number of cases is an important limitation in their effects on pregnancy outcomes. While analyzing the relationship between COVID positive cases and anxiety levels, we anticipated that determining anxiety types and evaluating pregnancy results according to these types would be more valuable.

Although the emergence of new subtypes of Corona virus is still being notified, currently, the pandemic process seems to ceased. There left a burden of mixed data concerning psychologic morbidities observed after such an extreme life-event. We believe that analysing this data will eventually add to our preparedness for next pandemics.

Most of the health authorities of developped countries implemented specialised clinical surveyance to monitor mental consequences of pandemics. Pregnancy as a susceptible group should not be forgotten to be included since the data we have shown is clearly depicting the adverse neonatal outcomes of pregnant women with anxiety.

Anxiety levels vary according to religion, ethnicity, family structure, cultural belief factors. Since we could not gather data about the above mentioned variables, this might be regarded as a limitation to our study. At the same time anxiety types may have unpredictable effects on pregnancy outcomes. While analyzing the relationship between COVID positive cases and anxiety levels, we anticipated that determining anxiety types and evaluating pregnancy results according to these types would be more valuable.

Conclusion

Depression and anxiety during pregnancy are associated with adverse pregnancy and perinatal outcomes. In our study, no significant impact on anxiety levels was observed regarding pregnant women's choice of receiving medical examinations and giving birth at a pandemic

Acta Medica Alanya 2023;7(3): 232-237
Doi: 10.30565/medalanya.1384162

Table 1. Sociodemographic Characteristics of the Patients

	COVID-19 Positive Group (n= 46)	COVID- 19 Negative Group (n= 54)	*p*
Age (Years) [a]	27 (20-45)	26.5 (17-40)	0.936
Height (cm) [a]	160 (150- 169)	159.5 (145- 174)	0.501
Weight (kg) [b]	68,95 ±12.91	70 ± 10.9	0.672
BMI (Body Mass Index)	26.80 ±4.64	27.59 ±4.45	0.408
Gravida			
Parity			
Education Level	n (%)	n (%)	0.081
Illiterate	3 (6.5)	4 (7.4)	
Primary School	4 (8.7)	13 (24.1)	
Secondary Education	16 (34.8)	19 (35.2)	
High School	13 (28.3)	14 (25.9)	
University	10 (21.7)	4 (7.5)	
Employment Status [c]	n (%)	n (%)	0.361
Employed	7 (15.2)	5 (9.3)	
Unemployed	39 (84.8)	49 (90.7)	

[a] Median (min-max)
[b] Mean ± std
[c] The percentage of patients, % within the group

Table 2. Reason for Admission

Reason for Admission	COVID-19 Positive Group (n= 46)	COVID- 19 Negative Group (n= 54)
Routine Checkup	15 (37.5)	15 (27.8)
Contractions	4 (10)	28 (51.9)
Vaginal Bleeding	0 (0)	1 (1.9)
Nausea/Vomiting	3 (7.5)	0 (0)
Cough/Shortness of Breath	17 (42.5)	0 (0)
Sore Throat	4 (10)	0 (0)
Childbirth	3 (7.5)	10 (18.5)

Table 3. Distribution of COVID-19 Positive and Negative Groups According to the Beck Anxiety Scale

	COVID-19 Positive Group (n= 46)	COVID- 19 Negative Group (n= 54)	*p*[*]
Beck Anxiety Scale			
0-7 Points (Minimal Anxiety)	**28**	**9**	
8-15 Points (Mild Anxiety)	**19**	**18**	***0.001***
16-25 Points (Moderate Anxiety)	**4**	**15**	
26-63 Points (Severe Anxiety)	**3**	**4**	

For statistical significance, p<0.05 *Fisher Exact Test

Table 4. Comparison of Anxiety Levels in Terms of Pregnancy or Childbirth During the COVID-19 Pandemic

Pregnancy or Childbirth During the COVID-19 Pandemic	COVID-19 Positive Group (n= 46)	COVID- 19 Negative Group (n= 54)	p^*
No Anxiety	**16**	**7**	*0.032*
Mild Anxiety	**1**	**1**	
Moderate Anxiety	**14**	**24**	
Severe Anxiety	**23**	**14**	

For statistical significance, p<0.05 *Fisher Exact Test

Table 5. Comparison of Anxiety Levels in Terms of Receiving Medical Examinations or Giving Birth at a Pandemic Hospital

Receiving Medical Examinations or Giving Birth at a Pandemic Hospital	COVID-19 Positive Group (n= 46)	COVID- 19 Negative Group (n= 54)	p^*
No Anxiety	**17**	**17**	*0.259*
Mild Anxiety	**5**	**1**	
Moderate Anxiety	**15**	**20**	
Severe Anxiety	**17**	**12**	

For statistical significance, p<0.05 *Fisher Exact Test

hospital or not. It was found that being COVID-19 positive, based on the Beck Anxiety Inventory, significantly increased the anxiety levels during pregnancy when compared to negative groups.

These results help us understand the psychological effects of the pandemic on pregnant women. Given the trend of increased anxiety levels in pregnant women during the pandemic and its more pronounced effect on those who are COVID-19 positive, it emphasizes the need to develop additional measures and support systems to promote the emotional well-being of pregnant women.

Conflict of Interest: No conflict of interest was declared by the authors.

Funding sources: The authors declared that this article received no financial support.

Ethics Committee Approval: Kocaeli Derince Education and Research Hospital Clinical Research Ethics Committee on 16.06.2020 no.2020/60.

ORCID and Author contribution: ***E.K. (0000-0002-4940-8862):*** Literature search, writing, critical review. ***L.A. (0000-0001-9344-808x):*** Literature search, writing, editing. ***G.G. (0000-0003-2837-8497):*** Literature search, writing, editing. ***H.K. (0000-0001-8503-0230):*** Literature search, writing, editing. ***M.Ç.K. (0000-0002-9330-3363):*** Literature search, writing, editing. ***E.A. (0000-0002-4940-8862):*** Literature search, writing, editing.

Peer-review: Externally peer reviewed.

References

1. WHO Coronavirus disease 2019 (COVID-19) situation report 116. May 16,2020, https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200515-covid-19-sitrep-116.pdf?sfvrsn=8dd60956_2 (accessed May 16, 2020)
2. Keskek SO, Erdogan H. COVID-19: A Current Brief Review. Acta Med. Alanya 2020;4(2):197-202. doi:10.30565/medalanya.747238
3. Yu N, Li W, Kang Q, Xiong Z, Wang S, Lin X et al. Clinical features and obstetric and neonatal outcomes of pregnant patients with COVID-19 in Wuhan, China: a retrospective, single-centre, descriptive study. Lancet Infect Dis. 2020;20(5):559-564. doi: 10.1016/S1473-3099(20)30176-6.
4. Lu H, Stratton CW, Tang Y-W. Outbreak of pneumonia of unknown etiology in Wuhan, China: the mystery and the miracle. J Med Virol. 2020; published online Jan 16. doi: 10.1002/jmv.25678.
5. WHO. Clinical management of severe acute respiratory infection when novel coronavirus (2019-nCoV) infection is suspected: interim guidance. Jan 28, 2020. https://www.who.int/docs/default-source/ coronaviruse/clinical-management-of-novel-cov.pdf (accessed Jan 28, 2020).
6. Öncel CR, Aslan A. Trend topics in prestigious and popular medical journals: The effect of Covid-19. Acta Med. Alanya 2020;4(3):207-208. doi:10.30565/medalanya.809103
7. Ayele TA, Azale T, Alemu K, Abdissa Z, Mulat H, Fekadu A. Prevalence and Associated Factors of Antenatal Depression among Women Attending Antenatal Care Service at Gondar University Hospital, Northwest Ethiopia. PLoS One. 2016;11(5):e0155125. doi: 10.1371/journal.pone.0155125.
8. Tunç S, Yenicesu O, Çakar E, Özcan H, Pekçetin S, Danışman N. Anxiety and depression frequency and related factors during pregnancy. The Journal of Gynecology-Obstetrics and Neonatology 2012;9(35):1431-5
9. Fairbrother N, Janssen P, Antony MM, Tucker E, Young AH. Perinatal anxiety disorder prevalence and incidence. J Affect Disord. 2016;200:148-55. doi: 10.1016/j.jad.2015.12.082.

Acta Medica Alanya 2023;7(3): 232-237
Doi: 10.30565/medalanya.1384162

10. Daglar G, Bilgic D, Koc S, Yörük B, Coskun Pl. Anxiety and depression levels of women's pre and post-labor stage and influencing factors. Innovative Journal of Medical and Health Science 2016;6(4):114-20 doi: 10.15520/ijmhs.2016.vol6.iss4.127.
11. Rubertsson C, Hellström J, Cross M, Sydsjö G, Anxiety in early pregnancy: prevalence and contributing factors. Arch Womens Ment Health. 2014;17(3):221-8. doi: 10.1007/s00737-013-0409-0.
12. Xiu-Xiu Ding, Yi-Le Wu, Shao-Jun Xu, Ruo-Ping Zhu, Xiao-Min Jia, Shi-Fen Zhang, et al. Maternal anxiety during pregnancy and adverse birth outcomes: a systematic review and meta-analysis of prospective cohort studies. J Affect Disord. 2014;159:103-10. doi: 10.1016/j.jad.2014.02.027.
13. Rose MS, Pana G, Premji S. Prenatal maternal anxiety as a risk factor for preterm birth and the effects of heterogeneity on this relationship: a systematic review and meta-analysis. Biomed Res Int. 2016;2016:8312158. doi: 10.1155/2016/8312158.
14. Grigoriadis S, Graves L, Peer M, Mamisashvili L, Tomlinson G, Vigod SN, et al. Maternal Anxiety During Pregnancy and the Association With Adverse Perinatal Outcomes: Systematic Review and Meta-Analysis. J Clin Psychiatry. 2018;79(5):17r12011. doi: 10.4088/JCP.17r12011
15. Taylor S. The psychology of pandemics: Preparing for the next global outbreak of infectious disease., Cambridge Scholars Publishing; Newcastle upon Tyne: 2019.
16. Asmundson GJG, Taylor S. Coronaphobia: Fear and the 2019-nCoV outbreak. J Anxiety Disord. 2020;70:102196. doi: 10.1016/j.janxdis.2020.102196.
17. Beck AT, Epstein Brown G, Steer RA. An inventory for measuring clinical anxiety: psychometric properties. J Consult Clin Psychol 1988;56:893- 7. doi: 10.1037//0022-006x.56.6.893.
18. Ulusoy M, Şahin NH, Erkmen H. Turkish version of the Beck Anxiety Inventory: Psychometric properties. J Cogn Psychother 1998;12:163-72.
19. Yuan K, Zheng YB, Wang YJ, Sun YK, Gong YM, Huang YT, et al. A systematic review and meta-analysis on prevalence of and risk factors associated with depression, anxiety and insomnia in infectious diseases, including COVID-19: a call to action. Mol Psychiatry. 2022 Aug;27(8):3214-3222. doi: 10.1038/s41380-022-01638-z.
20. Zilver SJM, Hendrix YMGA, Broekman BFP, de Leeuw RA, de Groot CJM, van Pampus MG. Fear of childbirth in pregnancy was not increased during the COVID-19 pandemic in the Netherlands: a cross-sectional study. Acta Obstet Gynecol Scand. 2022 Oct;101(10):1129-1134. doi: 10.1111/aogs.14409. Epub 2022 Jun 27.
21. Ayaz R, Hocaoğlu M, Günay T, Yardımcı OD, Turgut A, Karateke A. Anxiety and depression symptoms in the same pregnant women before and during the COVID-19 pandemic. J Perinat Med. 2020 Nov 26;48(9):965-970. doi: 10.1515/jpm-2020-0380.