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Anxiety and Depression in Pregnant Women with Previous History of Spontaneous Abortion

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A B S T R A C T

Spontaneous abortion is the most common adverse pregnancy outcome, and stress has been suggested to be important factor. We hypothesized that those female pregnant women with previous spontaneous abortion will have higher anxiety and depression than female pregnant women without previous spontaneous abortion and controls (healthy non-pregnant women). Age and socio-demographic parameters did not differ significantly between the three groups of participants. Anxiety and depression levels were assessed with the Beck Depression Inventory and the Beck Anxiety Inventory. There were no significant differences in the scores on Beck Depression Inventory between three groups of participants at the week 10 of gestation-1st assessment and week 20 of gestation-2nd assessment. Contrary of these results, pregnant women with history of spontaneous abortion have had statistically significant higher anxiety score than pregnant women without history of spontaneous abortion and control group-non-pregnant women, on both assessment of anxiety. Negative correlations between months passed form the last spontaneous abortion and anxiety on both assessment, emphasize the role of psychological support for the women who have experienced spontaneous abortion.

Key words: *anxiety, depression, pregnant women, spontaneous abortion*

Introduction

Spontaneous abortion, or miscarriage, is the naturally occurring »delivery or loss of the products of conception before the 20th week of pregnancy...,...without induction or instrumentation«[1]. Spontaneous abortion occurs in 12 to 24 percent of pregnancies[2]. Spontaneous abortion is the most common adverse pregnancy outcome, and stress has been suggested to be important factor. To understand the effect of miscarriage, it is important to place it in the context of the psychological changes described in early pregnancy[3]. Pregnancy is often a time of emotional turbulence with many psychological changes. Clinicians report that, for some women, a miscarriage can be a traumatizing event[4,5]. Only sparse scientific literature is available on conditions related to fetal loss, such as depression, anxiety and prolonged grief. Some authors have called for greater attention to the evaluation and treatment of psychological sequel after spontaneous abortion[5–6]. After spontaneous abortion, women are at higher risk for development of acute stress disorder and post-traumatic stress disorder and repeated abortions frequently lead to recurrent episodes of depression[7]. Relationship between pronounced stress and pregnancy should be explained via neuroendocrine system. The organism responds to stress mainly through the neuroendocrine system[8]. Both physical and emotional stress displays its effect by the secretion of corticotrophin releasing factor (CRF) in the hypothalamus and this stimulates the production of adrenocorticotropic hormone (ACTH) in the hypophysis and that epinephrine and corticosteroids in the adrenal gland. The increased blood levels of these hormones feed back to hypothalamic receptors to suppress ACTH secretion. Together, the quoted hormones prepare the organism for defence. They affect cardiac activity, respiration, blood pressure as well as the metabolism of fats and carbohydrates. Increase of corticosteroid levels decreases estradiol in women and affects generative function. Searching the literature, we have found only few papers from the authors in

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the Europe, concerning the role of previous stress on current pregnancy, regarding spontaneous abortion. In order to investigate possible connections, we hypothesized that those female pregnant women with previous spontaneous abortion will have higher anxiety and depression than female pregnant women without previous spontaneous abortion and controls (healthy non-pregnant women).

Materials and Methods

Subjects

Participants were women, controlled by gynaecologist at the Zaprešić Medical Center. There are three groups of participants: pregnant women with history of spontaneous abortion (N=25), pregnant women without history of spontaneous abortion (N=25) and control group-healthy non-pregnant women (N=25). All of them were closely matched for age. The socio-demographic data are given in Table 1. All participants were free of psychotropic medications during the period of investigation and in period of the previous 2 months. Also, there were no psychiatrically treated participants (previously and during the investigation) in the study. All subjects gave written informed consent to participate in the study. This study was approved by the Medical Center Ethics Committee.

Survey design and assessment instruments

The gynaecologist performed clinical evaluation. Patients' age, marital status, presence of having children, education and employment were included as socio-demographic characteristics. Data on history of family history of anxiety and depressive disorders, the number of spontaneous abortions and the time of the last abortion were also included, for each patient. The Beck Depression Inventory[9] was used to assess depression. The Beck Depression Inventory is a widely used clinical and research instrument which assesses current depressive symptomatology. The score of depression ranges from 0 to 63 and the higher the score, the more depression experi-

TABLE 1
SOCIO-DEMOGRAPHIC PARAMETERS IN THREE GROUPS OF PARTICIPANTS

	Pregnant women with history of spontaneous abortion (N=25)	Pregnant women without history of spontaneous abortion (N=25)	Control group (non-pregnant women) (N=25)
Age			
$\overline{X} \pm SD$	28.96±3.97	29.88±5.46	28.12±4.59
One-way ANOVA; F value= 0,872; p=0.423			
Having children			
Yes	14	18	16
No	11	7	9
χ^2=1.389; df=2; p=0.499			
Marital status			
Married	16	13	12
Single	7	10	11
Divorced-separated	2	2	2
χ^2=1.563; df=4; p=0.815			
Education			
Primary school	3	3	3
Secondary school	13	19	20
University level	9	3	2
χ^2=7.797; df=4; p=0.099			
Employment			
Employed	7	15	15
Unemployed	15	8	6
Student	3	2	4
χ^2=8.747; df=4; p=0.068			
Family history of anxiety and depression			
Positive history	5	1	1
Negative history	20	24	24
χ^2=5.042; df=2; p=0.080			

enced. The Beck Anxiety Inventory[10] determines anxiety, apart from depression, in respondents. This instrument allows for a reliable method to separate anxiety from depression, giving a more accurate measure. The BAI test requires a 21-item response using a 4-point scale. The four point scale ranges from 0 to 3 with a total score on the test 63 points. Five to ten minutes is necessary for completing the test.

Statistical analysis

The results were expressed as X±SD. All data were evaluated using one-way analysis of variance (ANOVA) followed by a Scheffee's multiple comparison test. When two groups were compared, Student's t-test was used. The differences in the socio-demographic variables between groups were assessed using Chi square (χ^2) test. A significance was accepted when $p<0.05$. Statistical analyses were performed with the statistical package SPSS version 10 for Windows.

The socio-demographic characteristics of the subjects are shown in Table 1. Age of the participants did not differ significantly different (one-way ANOVA; F value= 0.872; p=0.423) between pregnant women with history of spontaneous abortion (28.96±3.97), pregnant women with history of spontaneous abortion (29.88±5.46) and control group-healthy non-pregnant women (28.12±4.59) (Table 1). Also, there were no significant differences between three groups in having children ($\chi^2=1.389$; df=2; p=0.499), marital status ($\chi^2=1.563$; df=4; p=0.815), education ($\chi^2=7.797$; df=4; p=0.099), employment ($\chi^2=$ 8.747; df=4; p=0.068) and family history of anxiety and depression ($\chi^2=5.042$; df=2; p=0.080) (Table 1). There were no significant differences in the scores on Beck Depression Inventory between three groups of participants, at the week 10 of gestation-1st assessment (one-way ANOVA; F value=1.625; p=0.204) and week 20 of gestation-2nd assessment (one-way ANOVA; F value=0.645; p=0.528) (Table 2). Contrary of these results, on Beck Anxiety Inventory, there were significant differences between three groups of participants, on week 10 of gestation-1st assessment (one-way ANOVA; F value=66.744; p<0.001) and week 20 of gestation-2nd assessment (one-way ANOVA; F value=37.820; p<0.001) (Table 2). Pregnant women with history of spontaneous abortion have had statistically significant higher anxiety score than pregnant women without history of spontaneous abortion and control group of non-pregnant women, on both assessment of anxiety. Interesting findings are statistically significant negative correlations between months form last spontaneous abortion and anxiety on first assessment (Pearson=–0.428, p=0.033), also on second assessment via Beck Anxiety Inventory (Pearson=–0.546, p=0.005), which means that shorter time passed from last spontaneous abortion increases the level of anxiety in first and second trimester of the next pregnancy. We have also found statistically significant positive correlations between number of spontaneous abortions and anxiety on first assessment (Pearson=0.399, p=0.048), and second assessment via Beck Anxiety Inventory (Pearson=0.424, p=0.034), which means that previous repeated spontaneous abortions increase the level of anxiety in the current pregnancy.

Discussion and Conclusion

Severe stress regarding spontaneous abortion should damage to the invidual's psychosomatic integrity, which will predispose her later to depression, anxiety, decreased self-esteem and even suicidal tendency[11–13]. The principal finding of our investigation show that pregnant women with history of spontaneous abortion have significant higher anxiety than pregnant women without history of spontaneous abortion and control group of non-pregnant women, on both assessment of anxiety (week 10 and week 20 of pregnancy). It should be explained by the fact that spontaneous abortion posses potential of psychological stressor that affects further pregnancy. Negative correlations between months passed form the last spontaneous abortion and anxiety on both assessment, emphasize the role of psychological support for the women who have experienced spontaneous abortion. Significant positive correlations between number of spontaneous abortions

TABLE 2
DIFFERENCES IN THE SCORES ON BECK DEPRESSION INVENTORY AND THE BECK ANXIETY INVENTORY BETWEEN THREE GROUPS OF PARTICIPANTS

Scale	$\overline{X} \pm SD$			One-way ANOVA; F	p
	Pregnant women with history of spontaneous abortion	Pregnant women without history of spontaneous abortion	Control group (non-pregnant women)		
	10. week of gestation (1st assessment)		1st assessment		
Beck Anxiety Inventory	18.80±6.70	7.12±4.68	3.52±2,24	66.744	<0.001
Beck Depression Inventory	3.52±1.29	4.08±1.12	3.84±0.85	1.625	0.204
	20. week of gestation (2nd assessment)		2nd assessment		
Beck Anxiety Inventory	14.16±7.26	4.60±3.77	3.20±1.91	37.820	<0.001
Beck Depression Inventory	4.68±1.03	4.60±0.82	4.88±0.85	0.645	0.528

and anxiety, on both assessments during pregnancy, are very important result, because of practical implication. Contrary to anxiety, there were no significant differences in the scores on depression between three groups of participants, at the week 10 and week 20 of gestation and these results could be interpreted by the fact that anxiety was first psychological reaction and depression comes later. Gynaecologist faces with women who experienced previous repeated spontaneous abortions can inform these women about the important role of stress reduction methods that could lead to better chance for the next pregnancy. For gynaecologists, it is important to routinely enquire about pregnancy loss in all of pregnant patients. Our results called for greater attention to the evaluation and treatment of psychological sequel after spontaneous abortion in order to prevent further complications. A better understanding of the psychological factors in pregnancy can facilitate the detection of the population of women who have a high risk to have psychological problems in pregnancy, and to develop better treatment interventions for these patients. Limitations of the study include relatively small number of participants and lack of follow-up during third trimester of pregnancy.

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ANKSIOZNOST I DEPRESIJA KOD TRUDNICA S PRETHODNOM ANAMNEZOM SPONTANIH POBAČAJA

SAŽETAK

Spontani pobačaj je najčešći negativni ishod u trudnoći i stress pri tome ima značajnu ulogu. U našem istraživanju, postavili smo hipotezu da trudnice koje u anamnezi imaju spontani pobačaj, imaju višu razinu anksioznosti i depresije, nego trudnice bez prethodnog spontanog pobačaja u anamnezi i kontrolna skupina žena koje nisu trudne. Dob i socio-demografski parametri nisu se značajno razlikovali između tri promatrane skupine. Razina anksioznosti i depresije je procjenjivana putem Beckove skale za depresiju i anksioznost. Rezultati pokazuju kako nema značajnih razlika između skupina po pitanje simptoma depresije, tijekom 1. mjerenja (10. tjedan trudnoće) i 2. mjerenja (20. tjedan trudnoće). Međutim, skupine su se razlikovale po razini anksioznosti. Tako su trudnice koje u anamnezi imaju spontani pobačaj, imale značajno višu razinu anksioznosti, u odnosu na trudnice bez prethodnog spontanog pobačaja i kontrolnu skupinu žena koje nisu trudne, tijekom oba mjerenja. Pronađena je i negativna korelacija između broja mjeseci, koji su protekli nakon spontanog pobačaja u prethodnoj trudnoći, i anksioznosti, na oba mjerenja, čime se naglašava važnost psihološkog suporta za žene koje dožive spontani pobačaj.