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Original Article

Depression, anxiety, stress in different trimesters of pregnancy: A prospective study

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ABSTRACT

The present study was undertaken to observe depression, anxiety and stress levels in different trimesters of pregnancy to identify the trimester which is most stressful and suggest adequate management methods for the benefit of pregnant women and off spring. The present study has been conducted in 80 Antenatal patients (20-35 years) who were diagnosed with pregnancy for the first time without any pathology. DASS 42 was used to record depression, anxiety and stress scores. Depression and Anxiety scores were significantly increased in 3rd semester when compared with second. No significant difference was observed in depression and anxiety scores between first and third trimesters. Stress scores significantly decreased in second trimester when compared with first and third trimesters. Significant difference was observed between first and third trimesters also.We have observed first and third trimesters as highly stressful periods. Hence more care and support should be provided to the pregnant women during these trimesters for benefit of both mother and the offspring. We recommend further detailed and multi centre study to understand underlying causes for these stressful trimesters to plan effective methods to limit the depression, anxiety and stress in pregnancy.

Key Words: Pregnancy, depression, Anxiety, Stress, Trimesters.

INTRODUCTION

Normal duration of pregnancy is 38 weeks after the conception. Pregnancy can be divided into three trimesters. First twelve weeks of pregnancy are considered as first trimester, thirteen to twenty eight weeks are considered as second trimester and rest of the weeks are third trimester. Stress is the generalized, nonspecific response of the body to any factor that overwhelms or threatens to overwhelm, the body's compensatory abilities to maintain homeostasis. Since ancient times, it was believed that the emotional state of the pregnant mother may affect her unborn child. Present day, both animal and human studies are supporting this concept that maternal stress and anxiety during pregnancy can have both immediate and long-term effects on her offspring [1]. It was reported that stress and anxiety during pregnancy has been associated with shorter gestation & higher incidence of preterm birth, smaller birth weight and length and an increased risk of miscarriage [2]. Mover over it may cause hyper activity and attention and emotional disorders like schizophrenia in newborns [3]. Chronic stress of mother may cause excessive release of stress hormones, which can reach the fetus and effects brain development [3, 4]. Chronic or extreme maternal stress may also cause changes in the blood flow to the baby, making it difficult to carry oxygen and other important nutrients to the baby's developing organs [3, 4]. The present study was undertaken to observe depression, anxiety and stress levels in different trimesters of pregnancy to identify the trimester which is most stressful and suggest adequate management methods for the benefit of pregnant women and off spring.

Study design: Prospective study

MATERIALS AND METHODS

The present study has been conducted in Department of Obstetrics and Gynecology and Department of Biochemistry, GEMS hospital, with

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80 Antenatal patients (20-35 years) who were diagnosed with pregnancy for the first time without any pathology. Willing subjects (Pregnant women of 1st trimester), who came for antenatal check up to the centre, were randomly selected. Unwilling participants were excluded from the study. Depression, anxiety and stress scores were recorded in all the three trimesters and compared.

Assessment of depression, anxiety and stress: The DASS is a 42-item questionnaire which includes three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three scales contains 14 items, divided into subscales of 2-5 items with similar content. Respondents are asked to use 4-point severity/frequency scales to rate the extent to which they have experienced each state over the past week [5].

Ethical considerations: The study was approved by Institutional Ethics Committee. A written, informed consent was obtained from all the participants. The study was carried out in accordance with the "Ethical Guidelines for Biomedical Research on Human Participants, 2006" by the Indian Council of Medical Research and the Declaration of Helsinki, 2008. The respondents were given assurance of confidentiality.

Statistical analysis: Data was analyzed by SPSS 20.0. Data was presented as mean ±SD and **P** value <0.05 was considered as significant. One way ANOVA followed by Tukey HSD Post-hoc Test was applied to observe the significance.

RESULTS

Table 1 presents age distribution of pregnant women. Depression and Anxiety levels were significantly decreased in second trimester when compared to first. Depression and Anxiety scores were significantly increased in 3rd semester when compared with second. No significant difference was observed in depression and anxiety scores between first and third trimesters. Stress scores significantly decreased in second trimester when compared with first and third trimesters. Significant difference was observed between first and third trimesters also (table 2).

Table 1: Age distribution of pregnant women

Age (Years)	Number of women	%
20-25	50	62.5
25-30	16	20
30-35	14	17.5
Total	80	100

Data was presented as frequency and percentage.

Table 2: Levels of depression, Anxiety & stress levels at 1st, 2nd and 3rd trimesters

Variables	1st trimester	2nd trimester	3rd trimester	F value	P value
Depression	20.58±7.88	15.62±6.54	19.55±4.38	13.2551	0.0000***
Anxiety	22.12±4.39	17.31±7.32	20.7±5.32	14.7015	0.0000***
Stress	24.92±3.88	20.1±5.88	22.33±4.65	19.6001	0.0000***

Data was presented as mean ±SD. (* P<0.05 is significant, **P<0.01 is significant, ***P<0.001 is significant)

DISCUSSION

It was reported that in high stress and anxiety scores during pregnancy causes neurobehavioral changes in off spring [6]. Earlier studies reported that prevalence of anxiety and depression was high among pregnant women [7]. It was reported that depression decreased significantly in 2nd trimester compared to 1st trimester, where as highly significant decrease in anxiety & stress in 2nd trimester compared to 1st trimester [8]. Our study agrees these studies as we have observed similar results. First trimester was found to be highly stressful as depression, anxiety and stress scores were higher. This may be because these women were pregnant for the first time. However, there is a decline in the stress levels in second trimester, which may be due to regular care taken by family members and there was increase in stress levels in 3rd trimester, which may be due to approaching the date of parturition.

CONCLUSION

We have observed first and third trimesters as highly stressful periods. Hence more care and support should be provided to the pregnant women during these trimesters for benefit of both mother and the offspring. We recommend further detailed and multi centre study to understand underlying causes for these stressful trimesters to plan effective methods to limit the depression, anxiety and stress in pregnancy.

Conflicts of interest: Nil

REFERENCES

1. DiPietro, J.A. The role of maternal stress in child development. Current Directions in Psychological Science. 2004; 13(2), 71-74.
2. Huizink, A.C., Mulder, E.J.H., Buitelaar, J.K. Prenatal stress and risk for psychopathology: Specific effects or induction of general susceptibility? Psychological Bulletin. 2004; 130(1), 115-142.
3. Monk, C. Stress and mood disorders during pregnancy: Implications for child development. Psychiatric Quarterly. 2001; 72(4), 347-357.
4. Sullivan, R., Wilson, D.A., Feldon, J., Yee, B.K., Meyer, U., et al. The International Society for Developmental Psychobiology Annual Meeting Symposium: Impact of early life experiences on brain and behavioral development. Developmental Psychobiology. 2006. DOI 10.1002, 583-602.
5. Lovibond, S.H. & Lovibond, P.f. Manual for the Depression anxiety Stress Scales.1995; (2nd Ed) Sydney: Psychology Foundation.
6. Van den Bergh BR, Mulder EJ, Mennes M, Glover V. Antenatal maternal anxiety and stress and the neurobehavioural development of the fetus and child: links and possible mechanisms. A review, Neuroscience Biobehaviour Rev. 2005;29(2):237.
7. Karmaliani R, Bann CM, Pirani F, Akhtar S, Bender RH, Goldenberg RL, Moss N. Diagnostic validity of two instruments for assessing anxiety and depression among pregnant women in Hyderabad, Pakistan,Health Care Women Int. 2007;Jul:28(6):556-572.
8. O'Brien L, Schachtschneider AM, Koren G, Walker JH, Einarson A. Longitudinal study of depression, anxiety, irritability, and stress in pregnancy following evidence-based counseling on the use of antidepressants. J Psychiatry Practice.2007:13(1):33-39.