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Association of Depression and Anxiety with Missed Miscarriages

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Abstract:
Objective: To find out the Association of Depression and Anxiety with Missed Miscarriages.
Study Design: cohort study / observational study
Place and Duration of Study: Study was performed in department of obstetrics and gynecology Nishtar Hospital Multan from January 2017 to January 2018.
Methodology: We include the women diagnosed with missed miscarriage in observational group and the pregnant woman who are going to deliver normally as control group. Data of the each patient include body mass index, age, education level, occupation, planned pregnancy, health status before the pregnancy, information regarding pregnancy, exercise status of the patient before pregnancy and folic acid supplementation. To check the grade of anxiety and depression of the patient we used the Self-Rating Anxiety Scale (SAS) Center Epidemiological Studies Depression Scale (CES-D) respectively. Quantitative data was compared by applying Students T test and Chi-square test was applied on nominal data. Computer software SPSS version 23 was used to statistically analyze the data. P value of less than or equal to 0.05 was taken as significant.
Results: Life Events Scale for Pregnant Women (LESPW) was 220.08±90.58 and 137.04±56.59 in the observation and control groups respectively, difference being statistically significant ($p<0.001$). SAS was 43.25±9.60 in the observation group and 38.24±9.65 in the control group ($p=0.002$). CES-D score was significantly high in the observation group in comparison with the control group ($p<0.001$).
Conclusion: In our study we came to the conclusion that the negative emotions like anxiety and depression causes an increase in the rate of missed miscarriages
Keywords: Anxiety**,** Depression, Missed miscarriage

Introduction:

One of the major reasons of pregnancy loss is miscarriage. It is defined as the pregnancy that ends spontaneously before the twenty week of gestation.[1] Rate of miscarriage is around fifteen to twenty percent in woman of childbearing age and most of these miscarriages occur during the first three months of gestation.[2] [3]There are many causes of the miscarriages i.e. chromosomal abnormalities, hormonal problems, smoking, drug usage, trauma, increasing maternal age and infections.[4] Vaginal bleeding, back pain, cramps, weight loss and mucus or clots like discharge from the vagina are the symptoms of miscarriage.

There are many types of miscarriage and every type is different from each other. Miscarriage which is accompanied by uterine bleeding with the cervix not open is called threatened miscarriage.[5] Complete miscarriage is the one in which the products of conception are expelled from the uterus and there is no tissues left in the uterus. Incomplete and inevitable types of miscarriage are those in which the opening of the cervix remained open and the products of conception are eventually lost. Three or more consecutive miscarriages occur in the recurrent type of miscarriage. Missed miscarriage is the type in which the embryo dies inside the uterus and there is no expulsion of the tissues as a result of this body continues to release the hormones and woman experienced the signs of pregnancy.[6] Signs and symptoms of missed miscarriage differ from the other types as there is no expulsion, heavy bleeding and cramping.[7] Some woman experience that their sings of pregnancy i.e. nausea, vomiting, fatigue and breast tenderness is fading away. Ultrasound is used to diagnose the case of missed miscarriage. Dilatation and curettage (D&C) is used to remove the products of conception if they are retained in the uterus.[8]

With the advancement in the science our way of living is changed dramatically. Living standards is improved and life become more fast. People are shifting more towards unhealthy food and sedentary lifestyle. Due to these rate of missed miscarriage is increasing. Another factor involved in increasing the rate of missed miscarriages is the stress, depression, anxiety, anger and feeling alone and miserable. So in this study we are going to find out the effect of modern lifestyle and negative emotions on the rate on missed miscarriages. Anxiety is defined as an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure.[9] Anxiety has both physical and emotional symptoms i.e. nausea, sweating, diarrhea, insomnia, fatigue, headache, tachycardia, irritability, difficulty in concentration, over-alertness, feeling of apprehension and feeling of tense. Anxiety can be divided into these types i.e. generalized anxiety disorder, phobia, obsessive compulsive disorder, panic disorder, separation anxiety disorder and post-traumatic stress disorder. Depression is defined as

the medical disorder which negatively affects your way of thinking, your actions and your emotions.[10] Symptoms ranging from feeling sad, change in appetite, trouble sleeping, loss of energy, loss of interest and suicidal thoughts. In this study we are going to see the effects of anxiety and depression on missed miscarriages.

Material n methodology:

This study is an observational study. Study was performed in department of obstetrics and gynecology Nishtar Hospital Multan from January 2017 to January 2018. Ethical approval was obtained from hospital ethics committee. Informed consent was taken from the patients prior to the inclusion into this study. Sample size was calculated from the reference study performed by Huilin X et al. Non probability consecutive sampling technique was used to collect the sample size. In this study we divide the participants into two groups, Observational group (group O) and control group (group C). We include the women diagnosed with missed miscarriage in observational group and the pregnant woman who are going to deliver normally as control group. Patients with missed miscarriage due to any fetal factor or maternal factor i.e. chromosomal abnormality, uterine abnormality and endocrine abnormalities were excluded from the observational group. Any woman who had a missed miscarriage in the past was omitted from the control group of this study.

A senior gynecologist performed the study. Data of the each patient include body mass index, age, education level, occupation, planned pregnancy, health status before the pregnancy, information regarding pregnancy, exercise status of the patient before pregnancy and folic acid supplementation. All these parameters were assessed by using questionnaires which was prepared for the purpose of this study. To check the grade of anxiety of the patient we used the Self-Rating Anxiety Scale (SAS) made by Zung. In this scale there are about twenty items. Each item has four grades and score will be assessed according to the grade. To get a standard score we have to multiply the value we get by Zung scale by 1.25. If the score of the patient is higher than fifty it points out the presence of anxiety in the patient. Score and the level of anxiety are directly proportional. To find out the grade of depression in pregnant patients we used the scale formed by Sirodff the Center Epidemiological Studies Depression Scale (CES-D). This self-rating scale consists of twenty items each of which is divided into four grades. Score is calculated through this scale and the score of greater than twenty points shows the presence of depression in the pregnant women. To assess the life events occurring during the period of pregnancy Life Events Scale for Pregnant Women was used. In this scale there are two components Subjective events and objective events. Quantitative data was compared by applying Students T test and Chi-square test was applied on nominal data. Computer software SPSS version 23 was used to statistically analyze the data. P value of less than or equal to 0.05 was taken as significant.

Results:

(Calculated Sample size was small, therefore, we took 150 as our sample size.)

Both the group were not statistically significant in terms of age, BMI, occupation, education level, folic acid supplementation during pregnancy, planned or unplanned pregnancy and the history of any gynecological illness during or prior to pregnancy ($p>0.05$). Table-I

Objective events of the first, second and third degree were significantly different between both groups (p-value 0.001, <0.001 and <0.001, respectively). Subjective events were also statistically different in the observation and the control groups ($p<0.001$). Life Events Scale for Pregnant Women (LESPW) was 220.08±90.58 and 137.04±56.59 in the observation and control groups respectively, difference being statistically significant ($p<0.001$). Zung Self-Rating Anxiety Scale (SAS) was 43.25±9.60 in the observation group and 38.24±9.65 in the control group ($p=0.002$). The Center Epidemiological Studies Depression Scale (CES-D) score was significantly high in the observation group in comparison with the control group ($p<0.001$). Table-II

Table-I

Comparison of General Data

Variable	Group-O (n=75)	Group-C (n=75)	p-value
Age, years (mean± S.D)	29.07±5.69	27.87±5.90	0.207
BMI, kg/m^2, (mean± S.D)	22.97±2.41	23.25±2.36	0.473
Occupation, n (%)			0.356
Peasant	23 (30.67)	24 (32)	
Self-Employer	27 (36)	18 (24)	
Public Servant	14 (18.67)	16 (21.33)	
Workman	11 (14.67)	17 (22.67)	
Education Level, n (%)			0.913
Primary and Below	24 (32)	26 (34.67)	
Middle	16 (21.33)	13 (17.33)	
Intermediate	17 (22.67)	16 (21.33)	
College and Above	18 (24)	20 (26.67)	
Folic acid supplements, n (%)	68 (90.67)	64 (85.33)	0.315
Planned pregnancy, n (%)	60 (80)	59 (78.67)	0.840
Pre-pregnancy or pregnancy gynecological illness, n (%)	15 (20)	11 (14.67)	0.388

Table-II

Negative Emotions and life events of two groups (mean± S.D)

Factor	Group-O (n=75)	Group-C (n=75)	p-value
OE1	29.56±9.48	24.72±8.22	0.001
OE2	47.44±14.24	26.05±9.39	<0.001
OE3	118.60±16.58	58.11±9.32	<0.001
SE	18.21±8.54	31.41±17.09	<0.001
LESPW total score	220.08±90.58	137.04±56.59	<0.001
SAS Score	43.25±9.60	38.24±9.65	0.002
CES-D Score	18.05±5.39	9.47±4.77	<0.001

Data is mentioned as mean ±S.D; LESPW= Life Events Scale for Pregnant Women; CES-D= Center Epidemiological Studies Depression Scale

Discussion:

In our study we came to know that the objective and subjective events of life played a statistically significant role in the rate of missed miscarriages. Negative emotions increases the rate of missed miscarriages in pregnant woman and that rate are statistically significant. Huilin X [11] et al. conducted a study in which they found out similar results like our study. They said that the pregnant woman, who is healthy, happy, educated and concerned about seeking knowledge about care of her baby prenatally and postnatally have decreased risk of missed miscarriage as compared to the woman who is depressed and anxious.

Sonja E et al. [12] did a study to see the effects of negative emotions on the health of the fetus and they came to the conclusion that the mothers who are depressed and anxious during the pregnancy their child have more tendency to have disease as compared to the non-anxious and happy pregnant woman. Nancy K et al.[13] did a review of different articles and they saw that the pregnant patients who are depressed during antenatal period their babies suffered from intrauterine growth retardation, preterm birth, missed miscarriages and low birth weight. Teresa R[14] did a study to find out the relationship between woman unemployment and the risk of preterm birth and she came to the conclusion that the pregnant woman who are unemployed and depressed have increased rate of spontaneous preterm birth as compared to the women who are working and happy.

Seung H et al.[15] came to know in their study that the educated family with better earning has decreased risk of preterm birth and other complications as compared to the woman who is illiterate and unemployed. Scand J et al.[16] conducted a study on the women who had a history of missed miscarriage and they came to know that they are more depressed and anxious as compared to the other pregnant women. Cheng X et al.[17] did the study on 160 pregnant patients and they saw that the woman with missed miscarriage has higher rate of developing anxiety, depression, obsessive compulsive disorder and terror as compared to the normal pregnancies. Cara B et al.[18] in their study found out that the woman with missed miscarriage is more susceptible to have depression during the first month after the miscarriage.

Conclusion: In our study we came to the conclusion that the negative emotions like anxiety and depression causes an increase in the rate of missed miscarriages. Rate of missed miscarriage is low in women who are happy, healthy and educated.

Conflict of interest: There is no conflict of interest.

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