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CLINICAL SPECTRUM OF EARLY TRIMESTER PREGNANCY LOSS: INSIGHTS FROM A CASE SERIES

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ABSTRACT

Threatened miscarriage is the common gynecological emergency, occurring in about 20% of pregnant women. Early pregnancy loss in a pregnancy is stressful and frustrating to any couple. It becomes even more emotionally traumatic when occurs repeatedly. An estimated 23 million miscarriages occur every year worldwide, translating to 44 pregnancy losses each minute. The pooled risk of miscarriage is 15.3% [95% of 12.5-18.7%] of all recognized pregnancies. The population prevalence of woman who have had one miscarriage is 10.8% [10.3-11.4%], two miscarriages is 1.9% [1.8-2.1%] and three or more miscarriage is 0.7% [0.5-0.8%]. The overall early pregnancy loss rate is thought to be nearly 50%. At least 15% of fertilized ovum is lost before implantation and 20-25% of pregnancies end before they can be clinically defeated leading to an incidence of spontaneous abortion of some 12-19% among clinically recognized pregnancies [2-4]. Risk factors for miscarriages include very young or older female age [younger than 20, older than 35years], older male age[<40yrs], very low or very high body-mass index, block ethnicity, previous miscarriages, smoking, alcohol, stress, working night shifts, air pollutions, and exposure to pesticides. And psychological consequences like anxiety, depression, post-traumatic stress disorder, and suicides. In addition to the above-mentioned risk factors, polycystic ovary syndrome (PCOS), a common complication among women today, also significantly contributes to early pregnancy loss.

KEYWORDS: *Miscarriage, Prevalence, Ovum, Implantation, Spontaneous Abortion, Pregnancy Loss.*

INTRODUCTION

It was estimated that, about 10-15% of clinically diagnosed pregnancies may result in miscarriage and 80% of the cases are leading to pregnancy failure in their first trimester.[2] The prevalence of a clinically recognized early pregnancy loss ranges from 9% to 17% for women in their 20s and this risk rises significantly with age, reaching 20% by age 35, 40% by age 40, and as high as 80% by age 45.[3] The main cause for about 50% of all the miscarriages could be any chromosomal or congenital abnormality in the fetus and is diagnosed when pregnancy tissue is sent for genetic testing (KU typing) for both the patterns.[4] Other complications include some associated conditions like increased or young maternal age, uncontrolled chronic diseases(hypertension, diabetes mellitus, lupus/auto immune diseases), hormonal disorders such as thyroid, serum prolactin, PCOD, over or under weight.[5] In recent times a new immunological/autoimmune cause for first trimester loss was detected as Anti-phospholipid antibodies(APLA) syndrome or acquired thrombophilia, where in some antibodies tends the blood to become thicker, so that tiny blood vessels supplying blood to the developing baby starts to clot and fetus does not get proper blood supply ultimately leading to death of baby in womb.[6] Due to any uterine abnormalities i.e., excessive production of uterine fibroids in mother's womb makes the condition more critical for fetal development.[7] And in some rare circumstances cervical incompetence is observed due surgeries and repeated DNCs causing a miscarriage and is diagnosed by ultrasound.[8] The social factors such as smoking, use of recreational drugs, alcohol consumption and exposure to environmental toxins like lead and mercury may also be considered as few risk factors for early pregnancy loss.[9] Miscarriages can be classified and are categorized into different types as the following:

- **Missed Miscarriage (i.e., asymptomatic pregnancy loss):** The pregnancy has ended, but there are no noticeable symptoms of miscarriage but the loss can only be detected by an ultrasound
- **Biochemical Miscarriage:** it is a very early miscarriage detected only by declining HCG levels, without an ultrasound confirmed pregnancy, usually before 6 weeks.
- **Threatened Miscarriage:** it occurs when a woman experiences symptoms like vaginal bleeding and cramping in early pregnancy, but the cervix remains closed, and foetus is still viable on ultrasound.

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- **Inevitable Miscarriage:** it involves bleeding and cramping and with an open cervix (dilates) with the release amniotic fluid.
- **Incomplete Miscarriage:** it occurs when some pregnancy tissue remained in the uterus after a miscarriage, and the cervix is in open state.
- **Complete Miscarriage:** The complete loss of POC i.e., foetal tissue by experiencing bleeding, ultimately making the uterus empty.
- **Recurrent Miscarriage:** ≥ 3 consecutive repeated miscarriages are termed as recurrent miscarriage.
- **Septic miscarriage:** it is a rare early pregnancy loss with an intrauterine infection, often linked to nonsterile abortion practices.[10]

  The management of early pregnancy loss in the first trimester includes three methods which are expectant management, medical management and surgical management. [11] The medical management is proceeded by using medication such as misoprostol. [12]

CASES

Case-1

A pregnant female patient, of age 22 years old with a gestational period of 12 weeks has attended her general practitioner s clinic with chief complaints of having spotting i.e., vaginal bleeding and experienced abdominal cramps just before she identified the spotting. The doctor interviewed her physical and mental condition and also had a conversation with her husband about his medical and family history. Finally, she noticed that, her marital status was good, she and her partner have been planning for a pregnancy for the past 18 months and have no history of any past complications. Her family history includes that patient's father was having diabetes and hypertension since past few years and mother had a history 1st pregnancy miscarriage and was naturally aborted with twin babies in her 2nd pregnancy. Doctor took her physical examination and some tests which show that her BMI was normal and hemoglobin was found to be 10g/dl and all the remaining parameters were found to be normal. She was in a peaceful pregnancy period with clinical guided meditation, following proper pregnancy diet plan. But had an emotional stress as a day before, her brother met with an accident.

Case-2

A 16 years girl, with her teenage pregnancy of 10 weeks visited hospital for general checkup. After consulting the doctor she went through her regular physical examination. An abnormality was detected during examination and was sent for an ultrasound scan. The report impression showed that there is no fetal movement so was suggested for an abortion. Based on the investigations it was declared a missed abortion. The abortion process was proceeded by giving abortion pills. Previously she was diagnosed with UTI during her pregnancy phase. Being a minor this girl underwent through a sensitive pregnancy phase as she was married at an early age of 15 years. Her family history shows that mother has no complications during her pregnancy phase but father was diagnosed with hypertension. Coming to her socio history her life style and food habits were all healthy.

Case-3

A female patient aged 20 years and 14 weeks of pregnant has a hospital visit for general checkup, very unsure about her baby condition. She gone through some tests and unfortunately, in the tests it was found that there is no fetal heart rate and was advised for abortion. The abortion procedure was done by giving pills but fetal residues were remained inside the uterine cavity, and then went for DMC. Her mother medical history shows 1st pregnancy miscarriage and father had no health complications.

Case-4

A 21 years old female patient of 12 weeks gestational period came to the hospital with complaints of having bleeding spots and after examination was found to have a miscarriage. Her family medical history showed a familiar condition, where patients mother being a second wife to her father has history of nearly 8 repeated miscarriages, after baby being completely formed inside the womb. She was following pregnancy-based medications. Her marital status was good with no stress and healthy relationship. Two days before she identified the blood spotting, she was on a long journey travelling from Hyderabad to Guntur in train.

Case-5

An 18 –year old female presented to the hospital for antenatal evaluation. After being investigated by the doctor, she was gone through some tests and physical examination and was found to be a miscarriage at the end of her 8^{th} week. She has a history of approximately 7-8 repeated abortions previously with limited details on the nature or gestational phase and pregnancy. Her family history shows that mother had a 1st pregnancy miscarriage and in her 2nd pregnancy child was expired after delivery, her father had diabetes and hypertension. Following a peaceful conversation with the patient, we confirmed that she was taking a healthy diet plan and patient also had psychological stress due to repeated abortions.

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Case-6

A female patient of 20years age came to the hospital with severe shortness of breath, and fatigue in her 11th week. Doctor suggested her for a ultrasound scan and blood test, the scan report shows that there is no fetal heart beat and so was suggested for abortion and gone through abortion procedure. In the family history, mother didn't have any complication during pregnancy and father was a hypertensive patient. Husband had an occupational risk factor but no other health complications.

Case-7

Mrs. M aged 24 years and 10 weeks pregnant presented to the emergency department with chief complaints of having shortness of breath, generalized weakness, nausea, and vertigo. Unaware of her positive pregnancy test she was on travelling. Until the 2nd month scan the patient was very healthy with normal vitals and was found no complications. But during the 10th week i. e., the beginning of the third month the fetal heart beat was missed, which is declared to be missed abortion. Later, she used pills for complete abortion. Coming to the family history, her mother, along with the grandmother and other siblings had 1st pregnancy miscarriage and her mother had a thyroid abnormality and hypotension.

DISCUSSION

Form this study; we came to know that there may be a lot causes and risk factors which are affecting the early pregnancy loss. In majority of the cases chromosomal abnormality may be a superior cause and there are many articles which provided evidences that these chromosomal abnormalities may be a main cause for above 80% of all noted cases. Stress and psychological burden could be the other cause leading to early miscarriages. [13] In few cases, cultural practices such as female genital mutilation (FGM) and children marriage along with adolescent pregnancy are hugely damaging the girls sexual and reproductive health and the health of their babies.[] Also, these adolescent pregnancies are causing greater negative impacts on their emotional and mental status. Conceiving the babies at younger age could be dangerous for both mothers and babies, as seen in our cases, these teenage mothers in the age group between 10-19 years are more prone to have eclampsia or uterine infections, preterm premature rupture of the membrane (PPROM), pregnancy-induced hypertension and postpartum depression in comparison to the women of age between 20-24 years that increases the incidence of still birth.[15] Due to their younger age, there might be no adequate knowledge about pregnancy and their uterus which might not be well prepared or developed for carrying the baby leading to a miscarriage.[16] It is also observed that in most of the cases society pressure could be a cause where the women after the marriage are forced to have a pregnancy when not being physically or mentally ready. Some underlying factors could also include long distance travelling, no proper pregnancy care and food habits, other health issues during pregnancy and low body mass index (BMI).[17] Proper pregnancy knowledge is essential for managing the safe pregnancy, as the symptoms such as vaginal bleeding and cramping which are seen during miscarriage are also the common symptoms observed during normal pregnancy and better awareness about the pregnancy phase bring positive outcomes in dealing with risk factors and avoid the threat of repeated pregnancy loss.[3]

LIMITATIONS

- Our study is limited to a small sample size within a specific area and timeframe.
- This study does not include all factors affecting early pregnancy loss. It focuses only on a few causes and risk factors, such as chromosomal abnormalities, stress, psychological pressure, and young maternal age.
- Pregnancy losses due to accidents or injury to the uterus are not discussed in this study.
- These study findings varies due to inconsistencies and no proper uniformity in the study population.
- Conducting this study on a larger sample size over an extended period may give more comprehensive and varied results.

CONCLUSION

From this study, we conclude that the majority of early pregnancy losses are found to be due the fetal chromosomal abnormalities, young maternal age and any stress. So, the patient must be accordingly consoled by choosing best treatment options and by providing necessary knowledge about the pregnancy care to the conceived mothers by health care professional and having proper pregnancy maintenance can prevent the occurrence of early pregnancy miscarriages.

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