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**Original Research Article**

# A prospective observational study on recurrent pregnancy loss and its causes

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## ABSTRACT

**Background:** Our objective was to study and evaluate the causes of recurrent pregnancy loss.
**Methods:** A prospective observational study was done over a period of 6 months from July-December 2022 at the department of obstetrics and gynecology at BJ Medical College. It was observed that out of 3124 total deliveries, 40 patients had the history of recurrent pregnancy loss (1.2%).
**Results:** Out of total 3125 deliveries, 40 patients were identified with the above mentioned criteria, and the incidence level of recurrent pregnancy loss was calculated to be 1.2%. The results obtained were compiled and tabulated to observe that the maximum number of cases fell in the age group of 26-30 years and 70% of them belonged to the urban areas. 65% cases had primary pregnancy loss and 35% had secondary pregnancy loss. Second trimester losses were seen in 57.5% cases. The causes of the recurrent pregnancy loss were identified and categorised, where it was identified that uterine anomaly contributed to a large number of cases (30%).
**Conclusions:** Detailed work up to identify the cause like blood investigations for analysing endocrine causes, USG/MRI to identify uterine structural anomalies, genetic analysis and karyotyping of the fetus and both the parents to identify the genetic causes were carried out. Apart from treating the underlying causes, psychological counselling of the couple also becomes necessary. Lifestyle modification should always be advised to couples with such history.

**Keywords:** APLA, Hypothyroidism, Recurrent pregnancy loss, Uterine anomaly

## INTRODUCTION

Recurrent pregnancy loss is 2 or more pregnancy losses according to the American guidelines and 3 or more pregnancy losses according to UK guidelines prior to 24 weeks from the last menstrual period.[1] The incidence being 1-2% in the general population.[2] Pregnancy loss can be primary, where there is no prior pregnancy reaching upto viability and secondary, which includes those cases where there has been a previous pregnancy that has crossed the age of viability.

Recurrent pregnancy loss can be due to various causes like genetic causes, uterine anomalies, endocrine and autoimmune, infections and idiopathic causes.

The previous pregnancy losses can be confirmed by previous ultrasound documentation or beta HCG reports.

## METHODS

A prospective observational study was done over a period of 6 months from July-December 2022 at the department of obstetrics and gynecology at BJ Medical College. It was observed that out of 3124 total deliveries, 40 patients had the history of recurrent pregnancy loss (1.2%). The patients visiting the labour room were evaluated by taking detailed obstetric history for previous pregnancy losses and its confirmation by ultrasound or beta HCG. The past history was evaluated for any investigations or interventions done including any specific medical or surgical history. In cases where no specific cause was

identified for the recurrent losses previously, investigations like thyroid and sugar profile, serum prolactin, coagulation profile, APLA profile, karyotyping, ultrasound followed by MRI were done to evaluate the possible cause. Recorded data was categorised into the identified causes and results were obtained by calculating the percentages.

***Inclusion criteria***

Patients with previous 2 or more spontaneous pregnancy losses and viable current pregnancy. Patients with current 2nd or more spontaneous abortions.

***Exclusion criteria***

Pregnancy losses beyond 24 weeks, induced abortions, ectopic pregnancy were excluded.

## RESULTS

During the study, it was observed that 40% of the patients belonged to the age group 26-30 years as shown in Table 1. The higher rate of pregnancy loss in this category may be due to the higher rate of conception in this age group. As the age increases >35 years, the chances of genetic causes of abortion increases.

**Table 1: Distribution according to age.**

| Age distribution (years) | No. of cases (n=40) | Percentage |
|---|---|---|
| **<20** | 3 | 7.5 |
| **20-25** | 6 | 15 |
| **26-30** | 16 | 40 |
| **30-35** | 8 | 20 |
| **>35** | 7 | 17.5 |

**Table 2: Distribution according to cause.**

| Etiology | No. of cases (n=40) | Percentage |
|---|---|---|
| **Genetics** | 2 | 5 |
| **Endocrine** | 7 | 17.5 |
| **Immunological** | 5 | 12.5 |
| **Uterine anomaly** | 12 | 30 |
| **Infection** | 4 | 10 |
| **Idiopathic** | 10 | 25 |

The causes of the recurrent losses were evaluated and tabulated in Table 2 and it was found that uterine structural anomalies was the major factor contributing to 25% of the total causes. It included anomalies like septate uterus (4 cases), unicornuate (2) and bicornuate (1) uterus, asherman syndrome (1), submucosal myomas (2), cervical insufficiency (2).[3] It was observed that structural uterine anomaly leads to more of primary losses commonly seen in late first or early second trimester.

Amongst the endocrine factors it was observed that overt hypothyroidism (2 cases), diabetes mellitus (2), hyperprolactinemia (1), polycystic ovarian disease (1) and luteal phase defect (1) were the major hormonal causes of recurrent losses mainly seen in the second trimester. Overt hypothyroidism as compared to subclinical is mainly associated with multiple losses. In diabetes the embryotoxic nature of hyperglycemia is responsible for the loss.[4] Low progesterone levels in the luteal phase can be responsible for miscarriages and can be corrected by progesterone support during the luteal phase or early pregnancy.

Out of the 5 cases that had immunological causes for recurrent loss, 2 were positive for anti-phospholipid antibody, 1 had protein C deficiency, 1 showed the presence of anti-TPO antibody, and 1 had history of Rh incompatibility. APLA was responsible for 5% of the causes of recurrent pregnancy loss. Vascular thrombosis and inflammation in immunological diseases lead to obstetric complications like miscarriages, pre-eclampsia, intrauterine growth restriction.

Infections leading to recurrent losses were identified in 4 cases, among which 2 cases had ultrasound report suggestive of hydrosalpinx, 1 case of pelvic TB and 1 case of chronic cervicitis. Infections cause embryotoxicity which lead to pregnancy loss during early weeks.

Genetic causes mainly include parenteral balanced structural chromosomal rearrangement. Our study showed recurrent losses associated with single gene defects which accounted for upto 5% of the causes. 1 case was positive for sickle cell disease in the mother and the other had history of genetic analysis of all the pregnancy losses, which was suggestive of cystic fibrosis in all of them. Pre implantation genetic counselling can help to prevent adverse pregnancy outcomes and timely intervention. But the overall live birth rate cannot be changed by this method.[5]

For upto 25% of the cases, no specific cause was identified for the recurrent losses.

**Table 3: Demographic distribution.**

| Demography | No. of cases (n=40) | Percentage |
|---|---|---|
| **Urban** | 28 | 70 |
| **Rural** | 12 | 30 |

Table 3 shows that 70% of the cases belonged to the urban society and 30% belonged to the rural. The estimated reason could be the bias arising due to the urban location of the study institute. Lifestyle of the urban population causing stress and lack of physical activity, obesity can also sometimes be detrimental to the pregnancy outcomes.

Table 4 shows 65% of the cases had primary and 35% had secondary recurrent losses.

**Table 4: Type wise distribution.**

| Type wise distribution | No. of cases (n=40) | Percentage |
|---|---|---|
| **Primary** | 26 | 65 |
| **Secondary** | 14 | 35 |

First trimester pregnancy losses were calculated to be 42.5% and second trimester losses were seen in 57.5% cases as seen in Table 5. The most common cause i.e. structural uterine anomaly can be the biggest contributor to this finding.

**Table 5: Trimester wise distribution.**

| Trimester | No. of cases (n=40) | Percentage |
|---|---|---|
| **First** | 17 | 42.5 |
| **Second** | 23 | 57.5 |

## DISCUSSION

Recurrent pregnancy loss has now become a serious reproductive health issue increasing the burden on the health care system as well the couples trying to conceive. Majority of the cases have an underlying cause that needs to identified and rectified for better outcomes of pregnancy. Detailed work up to identify the cause like blood investigations for analysing endocrine causes, USG/ MRI to identify uterine structural anomalies, genetic analysis and karyotyping of the fetus and both the parents to identify the genetic causes can be carried out.

Various methods can be adopted in treating the underlying cause of the recurrent losses like surgical resection of the septa in case of septate uterus, hysteroscopic myomectomy in case of submucosal myomas/ polyps. Hysteroscopic adhesiolysis can be done in case of Asherman syndrome and encirclage can be done for cervical insufficiency.

For the endocrine causes, correction of the underlying imbalance by hormonal pills were found to improve the pregnancy outcomes to a great extent. Lifestyle modification can be an important contributor towards improving outcomes where endocrine causes may be responsible.

Starting aspirin at an early stage in cases with positive anti phospholipid antibody can help continuing the pregnancy.[6] Injection anti-D can be useful for Rh negative pregnancies.

Progesterone support in the later part of menstrual cycle and continuing it in early pregnancy in the form of micronized progesterone via oral or vaginal route has found to improve the pregnancy outcomes significantly.

In case of thyroid dysfunction and diabetes, correction to achieve the TSH and HBA1C levels within the normal limits is important before conception. Polycystic ovarian disease also needs to be treated with oral contraceptive pills along with diet modifications and exercise.

In case of infections, correction with antibiotics like cephalosporins combined with doxycycline for 7-14 days can be given. In case of hydrosalpinx, removal may improve the outcome.[7]

## CONCLUSION

Detailed work up to identify the cause like blood investigations for analysing endocrine causes, USG/ MRI to identify uterine structural anomalies, genetic analysis and karyotyping of the fetus and both the parents to identify the genetic causes were carried out.

Apart from treating the underlying causes, psychological counselling of the couple also becomes necessary. Lifestyle modification should always be advised to couples with such history. The patient should maintain a normal BMI, avoid excess alcohol or smoking, and take pre-conception folic acid.[8] These methods can improve the outcomes of pregnancy.

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## REFERENCES

1. Pillarisetty LS, Mahdy H. Recurrent Pregnancy Loss. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2023.
2. European Society of Human Reproduction and Embryology (ESHRE). Recurrent pregnancy loss. Strombeek-Bever: ESHRE. 2017. Available from: https://www.eshre.eu/Guidelines-and-Legal/Guidelines/Recurrent-pregnancy-loss.aspx. Accessed on 3 January 2023.
3. Ford HB, Schust DJ. Recurrent pregnancy loss: etiology, diagnosis, and therapy. Rev Obstet Gynecol. 2009;2(2):76-83.
4. El Hachem H, Crepaux V, May-Panloup P, Descamps P, Legendre G, Bouet PE. Recurrent pregnancy loss: current perspectives. Int J Women's Health. 2017:331-45.
5. Singh N, Rastogi K. Microbiology of recurrent pregnancy loss. In: S Mehta, B Gupta, eds. Recurrent pregnancy loss. Singapore: Springer Singapore; 2018:129-136.
6. Hamulyak EN, Scheres LJ, Marijnen MC, Goddijn M, Middeldorp S. Aspirin or heparin or both for improving pregnancy outcomes in women with persistent antiphospholipid antibodies and recurrent pregnancy loss. Cochrane Database Syst Rev. 2020;(5):CD012852.
7. Harb H, Al-Rshoud F, Karunakaran B, Gallos ID, Coomarasamy A. Hydrosalpinx and pregnancy loss: a

systematic review and meta-analysis. Reprod Biomed Online. 2019;38:427-41.
8. Talaulikar V. Recurrent first trimester miscarriage: a typical case presentation and evidence-based management review. J Clin Gynecol Obstet. 2022;11(2):23-6.

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