



EVALUATION OF ETIOLOGICAL FACTORS AND PREGNANCY OUTCOMES IN PATIENTS WITH RECURRENT PREGNANCY LOSS

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ABSTRACT

Aim And Objectives: To assess the obstetric and medical etiological factors in obstetric patients contributing to recurrent pregnancy loss and to study the pregnancy outcome associated with it.

Materials and Methods: This was a prospective observational study conducted at Department of Obstetrics and Gynaecology, Rabindra Nath Tagore Medical College and PDZH Hospital, Udaipur, including 110 pregnant women with history of recurrent pregnancy loss, from October 2020 to September 2021. The results were analysed in terms of sociodemographic factors, etiological factors and pregnancy outcome.

Results: Of 110 pregnant women with RPL, 43.64% of the patients were in the age group of 21 to 25 years. Majority belonged to lower socioeconomic class – class 4 (39.09%) followed by class 5 (34.55%). Hormonal causes were responsible for 21.81% of cases in RPL followed by anatomical (6.36%), infective (0.91%), immunological (2.72%) and genetic etiology in 0.91%. The potential cause remained unexplained in 54.55% cases. Gestational diabetes and Gestational hypertension were present in 3.64% and 7.27%, respectively, while both were seen in 1.82% cases. 69.09% of the patients were delivered by LSCS followed by normal vaginal delivery in 21.82% of the patients and 5.45% of the patients ended up in abortions again.

Conclusion: Pregnancy loss is a significant negative life event and the repetitive nature of RPL may intensify the grief experienced. Despite innumerable investigations, sometimes or rather most of the times, the etiology remains obscure. It is this group of women who becomes a challenge to manage. Ultimately, most effective therapy for women with unexplained RPL is antenatal counseling, psychological support and tender loving care. Early evaluation with appropriate interventions is the mainstay in management of such cases.

KEYWORDS : Recurrent Pregnancy Loss, Etiological factors, Pregnancy outcome, Unexplained, Sociodemographic profile

INTRODUCTION

Recurrent Pregnancy Loss (RPL) is regarded as a highly heterogeneous disease with multiple etiology causes including genetic abnormalities, anatomic factors, infection, immunology and endocrine factors, affecting 2-5% of the couples. However, there are still approximate 50% of RPL remain unexplained in aetiology, and this group is called unexplained RPL.¹

The definition of RPL is debated, ranging from two clinical miscarriages, not necessarily consecutive, according to the American Society for Reproductive Medicine (ASRM)² and a joint International Committee for Monitoring Assisted Reproductive Technology and World Health Organization glossary (Zegers-Hochschild et al, 2009)³, to three consecutive pregnancy losses (not necessarily intrauterine) as defined by both the European Society for Human Reproduction and Embryology (Jauniaux et al., 2006)⁴ and the Royal College of Obstetricians and Gynaecologists (RCOG Green Top Guideline, 2011).⁵ Primary RPL refers to multiple losses in a woman with no previous viable infants, whereas secondary RPL refers to multiple losses in a woman who has already had a pregnancy beyond 20 gestational weeks. Tertiary RPL refers to multiple pregnancy losses between normal pregnancies.^{6,7}

Clinical investigation of pregnancy loss, however, may be initiated after two consecutive spontaneous abortions, especially when fetal heart activity is identified before any of the pregnancy losses, when the women is older than 35 years of age, or when the couple has had difficulty conceiving.²

Although the exact proportion of patients diagnosed with a particular abnormality may vary among the populations studied, other associations have been made with anatomic abnormalities (12%–16%), endocrine problems (17%–20%), infections (0.5%–5%), and immunologic factors, including those associated with the APS (20%–50%).

Other miscellaneous factors have been implicated and account for approximately 10% of cases. Among women aged 35 or greater spontaneous fetal chromosomal abnormalities are likely to be responsible for the vast majority of losses⁸. Even after a thorough evaluation, the potential cause remains unexplained in about one-third to one-half of all cases of recurrent loss.^{9,10,11}

The prognosis for successful pregnancy depends both on the potential underlying cause of pregnancy loss and (epidemiologically) on the number of prior losses. Epidemiologic surveys indicate that the chance of a viable birth even after four prior losses may be as high as 60%.

In this study, we aimed to identify the etiological factors in obstetric patients contributing to recurrent pregnancy loss and to study the pregnancy outcome associated with it.

MATERIALS AND METHODS

This was a prospective observational study conducted in Department of Obstetrics and Gynecology at Rabindra Nath Tagore Medical College and PDZH Hospital, Udaipur, India, in women with history of recurrent pregnancy loss attending OPD and IPD, from October 2020 to September 2021 after approval by the institutional ethics committee. In the study 110 antenatal women with pregnancy loss visiting the OPD or admitted in labour room were included after taking written informed consent.

Inclusion Criteria

- All pregnant women with history of two or more spontaneous pregnancy losses.
- singleton pregnancies.

Exclusion Criteria

- Patient with previous history of
- Pregnancy losses of more than 20 weeks gestation.
- Ectopic pregnancy.
- Multiple gestation.
- Previous medical termination of pregnancy.
- Trauma induced previous pregnancy loss.

Patient's history including medical, obstetric, and family history, along with information on lifestyle of both the male and female partner was reviewed.

Detailed history of previous pregnancy outcomes, physical examination, routine and special obstetric examination related to recurrent pregnancy loss, blood and radiological investigations along with karyotyping, was done after obtaining consent from the patients and frequent periodical antenatal follow up of present pregnancy was carried out to monitor obstetric outcome.

All the tests were performed in accordance with relevant guidelines and regulations by following the guidelines of ESHRE (European Society of Human Reproduction and Embryology), November 2017. All the patients were given different RPL management therapies during their pregnancy period for carrying the gestation successfully to full term.

RESULTS

Table – 1 Socio Demographic Profile (n=110).

Age Group in Years	Percentage
18 - 20 yrs	7.27%
21 - 25 yrs	43.64%
26 - 30 yrs	42.73%
31 - 35 yrs	4.55%
Above 35 yrs	1.82%
Education Distribution of The Study Group	
Graduate	4.55%
Illiterate	23.64%
Primary school	31.82%
Secondary school	40.00%
Urban / Rural	
Urban	34%
Rural	66%

In our study, majority (43.64%) of the patients were in the age group of 21 to 25 years. The mean age of the study group was 25.34 years, with only 2 patients being >35 yrs of age. Majority of population 40% had attended secondary schooling followed by 31.82% who completed primary schooling. 34% women belonged to urban population and 66% rural.

Table – 2 Etiological Factors

Etiological Factors	Number of cases	Percentage
Hormonal	24	21.81%
Anatomical	7	6.36%
Immunological	3	2.72%
Infective	1	0.91%
Genetic	1	0.91%
Unexplained	60	54.55%
Gestational diabetes, gestational hypertension	2	1.82%
Gestational diabetes	4	3.64%
Gestational hypertension	8	7.27%

Hormonal causes were responsible for 21.81% of cases in recurrent pregnancy loss. Anatomical (6.36%), infective (0.91%), immunological (2.72%) and genetic (0.91%) have been found in couples with recurrent pregnancy loss. This leaves approximately 54.55 % of couples with unexplained causes of RPL. Gestational diabetes and Gestational hypertension were present in 3.64% and 7.27% cases of RPL, respectively. Both Gestational diabetes along with Gestational hypertension were seen in 1.82% cases.

Table – 3 Outcome Of Present Pregnancy

Outcome of present pregnancy	Number of cases	Percentage
Incomplete abortion	2	1.82%
Intrauterine fetal demise	6	5.45%
Complete abortion	2	1.81%
LSCS	76	69.09%
NVD	24	21.82%
Total	110	100.0%

69.09% of the patients were delivered by LSCS followed by normal vaginal delivery in 21.82% of the patients and 5.45% of the patients ended up in abortions again.

2 patients had incomplete abortions at 7 and 8 weeks respectively, 6 patients had intrauterine fetal death (missed abortions) at 6 to 8 weeks and 2 patients had complete abortions of dead born in second trimester.

DISCUSSION

Recurrent pregnancy loss is a multi-factorial disorder with a huge proportion of patients with unidentified etiology that creates complexity in its management and leads to psychological trauma and frustration in affected couples as well as in physicians. As a result, researchers have been carrying out to find out the unknown etiology of RPL in order to develop advanced treatments as well as precautionary approaches.

In our study (43.64%) of the patients were in the age group of 21 to 25 years. The mean age of the study group was 25.34 years. Majority of them 40% had attended secondary schooling followed by 31.82% who completed primary schooling. Maximum patients belonged to lower socioeconomic class – class 4 (39.09%) followed by class 5 (34.55%). Poorani VG et al (2019)¹² in their study of 100 pregnant women with recurrent pregnancy losses, the age distribution was maximum in 21 to 25 years (48%), 5 patients were above 30 years and 1 patient above 35 years and hence the mean age was found to be 25.34 years. Jivraj et al¹³ (2001) reported the mean (\pm SD) age at conception was 32.0 (\pm 5.4) years. The mean number of miscarriages was 3.4 (range 3–10).

In our study hormonal causes were responsible for 21.81% of cases in recurrent pregnancy loss. Anatomical (6.36%), infective (0.91%), immunological (2.72%) and genetic (0.91%) have been found in couples with recurrent pregnancy loss. This leaves approximately 67.27 % of couples with other causes of RPL. Recurrent second trimester abortions due to cervical incompetency was found in 4.55% of patients and septate uterus was in 1.82% of patients. In only one case (0.91%) autosomal recessive was found as genetic factor leading to RPL.

Saito et al¹⁴ (2005) and Jivraj¹³ (2001) reported a rate of 7% and 13% endocrinal etiology for recurrent pregnancy loss in their study respectively whereas in study by Poorani VG et al¹² (2019) it was found in 23% of the population, and they also reported an incidence of 2% and 3.3% of diabetes and hypertensive disorders accounting for recurrent pregnancy loss, which in my study was found in 5% and 7% respectively indicating that sedentary lifestyle and stress and obesity accounted for the increased incidence of these hormonal changes and obstetric complications found in them. In a majority of women, RPL remained unexplained. It is in these women, that counseling must be done keeping her age, parity and previous obstetrics history in mind.

Depending on the study, the prognosis for successful pregnancy in couples with a cytogenetic etiology for reproductive loss varies from 20% to 80%.¹⁵⁻¹⁷ Women with corrected anatomical anomalies may expect a successful pregnancy in 60% to 90% of cases.¹⁸⁻²¹ A success rate higher than 90% has been reported for women with corrected endocrinologic abnormalities. Between 70% to 90% of pregnancies reported among women receiving therapy for antiphospholipid antibodies have been viable.^{22,23}

CONCLUSION

Recurrent pregnancy loss is a great mental trauma to any mother and the obstetrician; hence evaluation of these patients should be started from the preconceptional period itself. Genetic abnormalities, immunological factors, anatomic defects, endocrinal factors, certain thrombophilias and infections are established causes of RPL and specific treatment improves pregnancy outcome. Most couples will have no identifiable pathology, and in such cases, there is good prognosis for future successful pregnancy.

In conclusion, the major factor of RPL in our study i.e. 54.55% patients represent a heterogeneous group experiencing Unexplained pregnancy loss. The reproductive outcome in women with Unexplained pregnancy loss may be very much improved via effective and productive psychiatric therapy, antenatal counseling, psychosomatic support, tender care love and reassurance of live births in subsequent pregnancies. Furthermore, exhaustive well structured researches are necessitated in etiology, reproductive immunology and medicine for the management of this disorder.

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