

International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622
© Gynaecology Journal
www.gynaecologyjournal.com
2024; 8(6): 32-35
Received: 21-09-2024
Accepted: 02-11-2024

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To evaluate the reproductive performance of couples with previous miscarriages and perinatal deaths

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DOI: <https://doi.org/10.33545/gynae.2024.v8.i6a.1536>

Abstract

Reproductive loss such as miscarriages and perinatal deaths, is a significant emotional and physical event for couples, with implications for their future reproductive performance. This study examines pregnancy outcomes in women with a history of spontaneous abortion or perinatal loss compared to those with no prior pregnancies.

Methods: A retrospective cohort design included 200 women with previous reproductive losses (Study group) and 200 women with no prior pregnancies (Control group).

Results: Key outcomes analyzed were ectopic pregnancies, spontaneous abortions, intrauterine growth restriction (IUGR), preterm delivery, low birth weight, perinatal mortality, and neonatal health indicators such as Apgar scores. The study group demonstrated significantly higher rates of adverse outcomes, including increased rates of preterm delivery (22.5% vs. 8.6%), low birth weight (13.2% vs. 3.03%), and perinatal deaths (15.3% vs. 4.04%) compared to the control group. Additionally, within the study group, women with no live births faced an elevated risk of complications, such as pregnancy-induced hypertension and antepartum haemorrhage.

Conclusion: These findings highlight the need for enhanced prenatal care and monitoring strategies for women with prior reproductive loss to improve maternal and neonatal outcomes.

Keywords: Reproductive loss, miscarriages, perinatal deaths, spontaneous abortion, pregnancy outcomes

Introduction

Miscarriages and perinatal deaths are examples of reproductive loss, which affects a couple's future reproductive success and is a major emotional and physical tragedy. According to research, couples who have one or more miscarriages or infant deaths have particular physiological and psychological difficulties throughout their subsequent pregnancies, which could affect the result. About 10–20% of known pregnancies end in miscarriages, which are defined as pregnancy loss before 20 weeks of gestation. The frequency rises with mother age and specific underlying medical disorders (Practice Committee of the American Society for Reproductive Medicine, 2020).

Fetal mortality after 20 weeks of pregnancy and up to seven days after delivery is known as perinatal death, and it is linked to a number of risk factors, such as genetic abnormalities, infections in the mother, and pre-existing medical disorders (Flenady *et al.*, 2011) [2]. These losses create a heightened sense of vulnerability and can impact decisions regarding future pregnancies, as well as the medical care provided.

Depending on medical intervention, psychological support, and underlying health issues, the reproductive performance that follows a miscarriage or infant death might vary greatly. Research points to a possible increased risk of difficulties in subsequent pregnancies, such as recurrent miscarriages, premature births, and other unfavourable outcomes, for couples who have previously experienced reproductive losses (Larsen *et al.*, 2013) [3]. Furthermore, the psychological effects of past losses may also lead to elevated levels of stress, worry, and depression, all of which may have an impact on reproductive results and health (Blackmore *et al.*, 2011) [1]. In order to improve results and reduce risk, managing subsequent pregnancies requires thorough monitoring, psychological counselling, and early and continuous support from healthcare professionals. This study was conducted to examine pregnancy outcomes in women with a history of spontaneous abortion or perinatal loss compared to those with no prior pregnancies.

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Materials and Methods

This retrospective cohort study was conducted to evaluate the reproductive performance of women with a history of one or more spontaneous abortions or perinatal deaths compared to a control group with no prior pregnancies. The study population consisted of 400 women who were consecutively recruited from Department of Department of Obstetrics and Gynaecology, Sri Guru Teg Bahadur Hospital, Amritsar. The study group included 200 cases with a documented history of spontaneous abortion (Pregnancy loss before 20 weeks of gestation) or perinatal death (Fetal death after 20 weeks or neonatal death within seven days postpartum). The control group consisted of 200 women with no pregnancy history prior to the index pregnancy. Detailed demographic, medical, and obstetric data were collected through patient records and structured interviews.

Inclusion criteria

- Women aged 18-45 years with current pregnancy or completed recent pregnancy.

- History of one spontaneous abortion or perinatal death

Exclusion criteria

Women with ART or IVF

Women with genetic disorder or abnormality associated with recurrent pregnancy loss Women with chronic conditions such as diabetes or CVD.

Information on age and relevant medical history (e.g., underlying chronic conditions, previous surgeries) was recorded for each participant. Pregnancy-related data such as gestational age at loss (For cases), index pregnancy outcomes, complications, and live birth status were documented. The primary outcome of interest was reproductive performance in the index pregnancy, measured by the rate of live birth, preterm delivery, low birth weight, and pregnancy complications.

Data analysis was done using SPSS version 25 and percentages were calculated

Results

Table 1: Pregnancy outcome in the study and control group

Pregnancy outcome	Study group (n=182)		Control group (n=198)	
	No of cases	Percentages	No of cases	Percentages
Ectopic pregnancy	2	1	0	0
Spontaneous and missed abortions	16	8	2	1
IUGR	15	8.2	4	2.02
Placenta Praevia	11	6.1	4	2.02
PROM	22	12.1	6	3.03
Preterm deliveries	41	22.5	13	8.6
Term deliveries	141	77.5	185	93.4
Low birth weight	24	13.2	6	3.03
Perinatal deaths	28	15.3	8	4.04
Low APGAR score	19	10.4	4	2.02
Congenital malformations	4	2.19	1	0.5

Table 1: Ectopic pregnancies, spontaneous and missed abortions, intrauterine growth restriction (IUGR), and placenta praevia occurred more frequently in the study group, suggesting an increased risk profile for these women. Preterm deliveries were also more common in the study group (22.5%) than in the control group (8.6%), along with higher rates of preterm rupture

of membranes (PROM) and low birth weight (13.2% vs. 3.03%). Furthermore, perinatal deaths (15.3% vs. 4.04%), low Apgar scores (10.4% vs. 2.02%), and congenital malformations (2.19% vs. 0.5%) were more prevalent among the study group, highlighting the heightened risk of neonatal complications.

Table 2: Pregnancy outcome in relation to at least one alive baby as compared to with no alive baby in study group

Complications	Women with no alive baby (n=90)		Women with atleast one alive baby (n=110)	
	No of cases	Percentages	No of cases	Percentages
Ectopic pregnancy	1	1.1	1	0.9
PIH	4	4.4	1	0.9
APH	10	11.1	1	0.9
IUGR	10	11.1	5	4.5
Perinatal deliveries	27	30	7	6.3
Low APGAR score	12	13.3	1	0.9
Congenital malformations	3	3.3	1	0.9

Table 2: pregnancy outcomes showed that the analysis of complications in women with no alive baby compared to those with at least one alive baby highlights a notably higher incidence of adverse outcomes in the former group. Women with no alive baby experienced more cases of pregnancy-induced hypertension (PIH) (4.4% vs. 0.9%), antepartum hemorrhage (APH) (11.1% vs. 0.9%), intrauterine growth restriction (IUGR) (11.1% vs. 4.5%), and low Apgar scores (13.3% vs. 0.9%). Furthermore, the rate of perinatal deaths was significantly higher among women with no alive baby (30%) compared to those with

at least one (6.3%), underscoring the increased risk of neonatal complications and mortality in this group.

Apart from this, when gravida was analyzed, it was found that 33% of study group cases were having second gravida, 28.5% third gravida, 14% fourth gravida and 10.5% were fifth gravida. All control group cases were primigravida.

The above table shows the complications that occurred in late pregnancy in the study and control groups. The incidence of preterm labour in the study group was 20.5% as compared to 6.5% in the control group.

Table 3: Complications of Late Pregnancy

Complications	Study group with abortions		History of perinatal mortality		Control group	
	No	%	No	%	No	%
PIH	1	1.1	4	3.5	13	6.5
Placental prevaia	5	5.6	6	5.4	4	2
Preterm labour	20	22.7	21	18	13	6.5
IUGR	6.	6.8	9	8	4	2
Total	32		40		41	

The incidence of PI in the control group was 6.5% as compared to 2.5% in the study group. Placenta praevia was seen in 5.5% and IUGR in 7.5% cases of study group as compared to 2% each in the control group. Thus, it is seen that the incidence of PIH in the control group is more than the study group while the incidence of other complications is more in the study group.

Discussion

Women with a history of spontaneous abortion or perinatal loss are at an elevated risk for adverse outcomes in subsequent pregnancies. This study compares pregnancy outcomes in women with prior reproductive loss to those with no previous pregnancies, aiming to identify specific risks and inform targeted prenatal care.

Pregnancy outcomes in the research and control groups show a significant rise in unfavourable outcomes for women with a history of reproductive loss, highlighting the ongoing difficulties they encounter with reproduction. In line with results from earlier studies, the study group had higher incidence of ectopic pregnancies, spontaneous abortions, intrauterine growth restriction (IUGR), placenta praevia, preterm rupture of membranes (PROM), and preterm deliveries (Bhattacharya *et al.*, 2012; Blackmore *et al.*, 2011) ^[5, 1]. In particular, the research group experienced a significantly greater rate of preterm deliveries (22.5%) compared to the control group (8.6%), indicating the influence of previous pregnancy difficulties on subsequent gestational duration (Warland *et al.*, 2018) ^[6]. According to studies, these experiences could cause long-lasting physiological alterations that affect placental development and could result in diseases including IUGR and PROM (Lamont *et al.*, 2011) ^[7].

Additionally, the study group's perinatal mortality rate was greater (15.3%) than that of the control group (4.04%), indicating that women who have experienced previous pregnancy losses are more likely to experience new-born problems and fatality. These findings resonate with data from Larsen *et al.* (2013) ^[3], who documented similar trends in perinatal mortality linked to past obstetric adversity. Furthermore, the study group had a higher prevalence of low Apgar scores (10.4% compared to 2.02% in the control group), which emphasizes the effect of previous reproductive losses on neonatal outcomes. Both physiological and psychological variables may have an impact on the association between previous pregnancy losses and subsequent neonatal health issues, as suggested by Blackmore *et al.* (2011) ^[1], who documented a link between maternal stress and pregnancy complications.

Compared to those who had at least one live delivery, women in the research group who had no live births had a noticeably greater rate of problems, including antepartum hemorrhage (APH) and pregnancy-induced hypertension (PIH). Women who had no live births had very high rates of perinatal mortality (30% vs. 6.3%) and low Apgar scores (13.3% vs. 0.9%), highlighting a pattern of enhanced obstetric risk in this subgroup. These outcomes support findings from Gibbins *et al.* (2013) ^[8], who

reported that a lack of successful previous pregnancies could increase the likelihood of adverse outcomes, potentially due to psychological stress and underlying health issues.

Additionally, the distribution of late pregnancy issues showed that the study group had greater rates of IUGR, preterm labor, and placental difficulties, especially those with a history of perinatal mortality. Preterm labor was more common among women with prior perinatal deaths (18%) than in the control group (6.5%), echoing findings from Flenady *et al.* (2011) ^[2] that such histories can predispose women to repeated complications in subsequent pregnancies. The study group's ongoing risks for unfavourable pregnancy outcomes point to the necessity of rigorous prenatal care and surveillance plans catered to these women's particular risk profiles, as proposed by Blackmore *et al.* (2011) ^[1] and Bhattacharya *et al.* (2012) ^[5].

Conclusion

In conclusion, women who have experienced spontaneous abortion or perinatal loss in the past are far more likely to have unfavourable pregnancy outcomes than women who have never had a pregnancy. Preterm delivery, intrauterine growth restriction (IUGR), placenta praevia, low Apgar scores, and neonatal mortality are among the issues that these mothers are more likely to experience. Furthermore, people who have never given birth are considerably more vulnerable to problems like antepartum hemorrhage (APH), pregnancy-induced hypertension (PIH), and poor neonatal health outcomes, including increased perinatal mortality rates. These findings emphasize how crucial it is for women with a history of reproductive loss to get specialized prenatal care, more frequent monitoring, and supportive interventions. By taking early measures to address these risk factors, medical professionals can aim to enhance maternal and neonatal outcomes for this vulnerable population.

Conflict of Interest

Not available

Financial Support

Not available

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How to Cite This Article

Kaur S, Kaur K, Singh B, Kaur H, Sharma S. To evaluate the reproductive performance of couples with previous miscarriages and perinatal deaths. *International Journal of Clinical Obstetrics and Gynaecology*. 2024; 8(6): 32-35.

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