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Original Research Article

# A Comparative Study of Obstetric Outcome in Women with Previous Spontaneous Abortion versus Women with Previous Normal Delivery

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**Abstract**

**Introduction:** A pregnancy that fails to proceed, resulting in the death and ejection of the embryo or foetus, is referred to as a miscarriage (abortion). Each individual's miscarriage has a unique aetiology, which is frequently unknown.

**Aim:** The purpose of our study is to compare women who have a history of previous spontaneous abortion to women who have a history of prior normal delivery in order to estimate the risk of preterm delivery, low birth weight, IUGR, recurrence of abortion, stillbirth, IUD, and PROM use, among other unfavourable outcomes.

**Methods:** This prospective comparative study was conducted. By using a systemic random selection process, we enrolled 200 patients who were OPD/IPD/ANC patients at the obstetrics and gynaecology department of the S.P. medical college and related network of hospitals in Bikaner starting in November 2021. According to the study population, each subject was split into two groups. Group 1: The trial group consists of 100 patients with a history of one or more spontaneous abortions. Group 2: Control group consists of 100 patients with a history of no more than one full-term normal delivery that resulted in a live birth. All patients underwent thorough examinations, had thorough histories involving prior abortions obtained, and were monitored up until delivery with a focus on this information.

**Results:** In study group, 32.55% neonates had NICU admission whereas in control group, 4.08% had NICU admission (p=0.0001*). In study group, 12% cases had abortion and 2% cases had IUD whereas in Control group, 2% cases had abortion. (p=0.007). In study group, 20% had PROM, 10% had IUGR, 3% placenta previa and preeclampsia each, and 2% had breech delivery whereas in control group, 10% had PROM, 6% had IUGR, 1% preeclampsia and placenta previa each, and 2% had breech delivery.

**Conclusion:** Every pregnancy that has experienced spontaneous abortion in the past should be regarded as a high risk pregnancy, and evaluation along with antenatal checkups should be carried out carefully and routinely.

**Keywords:** Previous Spontaneous Abortion, Live Birth.

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## Introduction

The term miscarriage (abortion) is used to describe when a pregnancy does not progress and the embryo or fetus dies and is expelled. According to the generally accepted definition, the fetus or embryo must weigh less than 500 grams, a stage corresponding to up to 20 weeks of gestation. WHO.[1] According to the American Pregnancy Association (APA), 10-25% of all pregnancies are of clinically recognized duration. Pregnancy with miscarriage. The causes of miscarriage vary from person to person, and in many cases the cause is unknown.[2]

Nearly 80% of diagnosed abortions occur before the first trimester of pregnancy. By the eighth week, the gestational sac is completely extruded from the uterus. Expulsion of the fetus, which often occurs between 8 and 14 weeks, leaves the placenta and placental membranes behind, causing heavy bleeding.

After 14 weeks of gestation, at some point during cervical dilation, the membrane ruptures and the fetus and placenta are born separately, so the process is similar to that of parturition. As a result, the uterus is not properly sensitized and the muscles are less efficient, often leaving a portion of the chorion, and excessive bleeding is common.[3]

Abortion has been suggested to be associated with fetal pathologies, birth defects, low birth weight, low APGAR scores, Down syndrome in young mothers, IUGR, and premature birth in subsequent pregnancies.

Studies have shown that 70% to 80% of live births are successful with counseling and supportive care in patients who have had spontaneous abortions. The aim of this study is to investigate pregnancy outcomes in patients with a history of abortion and compare them with those with a history of normal delivery.

**Aim**

The aim of our study was to determine the risk of preterm birth, low birth weight, IUGR, re-abortion, stillbirth, IUD, PROM, or other adverse outcomes in women with a history of spontaneous abortion based on a previously estimated history of Compare with older women. normal delivery.

## Methods

This was a comparative prospective study. We included 200 patients by systemic random selection, attending OPD/IPD/ANC in department of OBG at tertiary care center northwest Rajasthan from Nov. 2021 onwards. All the subjects as per study population were divided into two groups. Group 1: study group include 100 cases of patient having history of ≥ 1 spontaneous expulsion of abortus. Group 2: control group include 100 cases of patient having history of ≥ 1 previous full term normal delivery resulting in live birth.

Patients between the ages of 18 and 35 with a history of any gestational period or aetiology were included in this study. Patients with 1 or more spontaneous abortions were enrolled in the study group, while patients with 1 or more previous live births were included in the control group.

Patients having histories of induced abortion, spontaneous abortion during twin pregnancy, PIH, chronic hypertension, gestational diabetes mellitus, GDM, juvenile diabetes, heart disease, anaemia, histories of carcinoma, and histories of HIV/HBsAg/VDRL/Twins were excluded from the study.

We included 200 patients, with 100 in the study group having experienced a spontaneous abortion prior to the current pregnancy, and 100 in the control group having experienced a previous normal delivery regardless of gravidity, first visit, or booked or unbooked. All patients underwent thorough examinations and

histories, and they were all monitored until delivery. All regular inquiries and inquiries into potential causes of earlier abortions were completed. Patients were compared and observed for pregnancy outcomes, neonatal complications, and delivery methods in each group. Maternal complications like abortion, placenta previa, placental abruption, premature rupture of the membranes, pre-eclampsia and eclampsia, breech presentation, preterm labour, intrauterine foetal death, neonatal complications like low birth weight, gross congenital malformations, low Apgar score at 1 minute, and delivery methods like caesarean delivery or instrumental delivery (forceps or vacuum) were among the pregnancy outcomes.

### Statistical Analysis

Data was entered in excel spread sheet and analysisi was done by Epi info software and appropriate statistical testes. Level of significance was taken as 0.05.

### Results

Majority of the subjects were of 21-25yr age group, mean age in study group was 23.68 ± 3.36 yr and in control group, it was 24.46 ± 3.04 yr. 57% cases were of rural area, 56% females were booked, in study group and 50% rural and 44% were booked in control group. according to their socio economic status (B G Prasad) where in both study and control group majority of cases i.e. 53% and 58% respectively belonged to class III.

**Table 1: Sociodemographic**

| Age Distribution (Years) | Study group | | Control group | |
|---|---|---|---|---|
| | N | (%) | N | (%) |
| ≤20 | 20 | 20.0 | 8 | 8.0 |
| 21-25 | 55 | 55.0 | 56 | 56.0 |
| 26-30 | 20 | 20.0 | 32 | 32.0 |
| 31- 35 | 5 | 5.0 | 4 | 4.0 |

In cases, according to number of previous abortions in study group where maximum cases i.e 79% had h/o one abortion followed by 16% had h/o 2 abortion and minimum 5% had h/o 3 abortions. In controls, according to number of previous live birth in control group where maximum cases i.e. 87% had h/o one live birth followed by 12% had h/o 2 live birth and minimum 1% had h/o 3 live births.

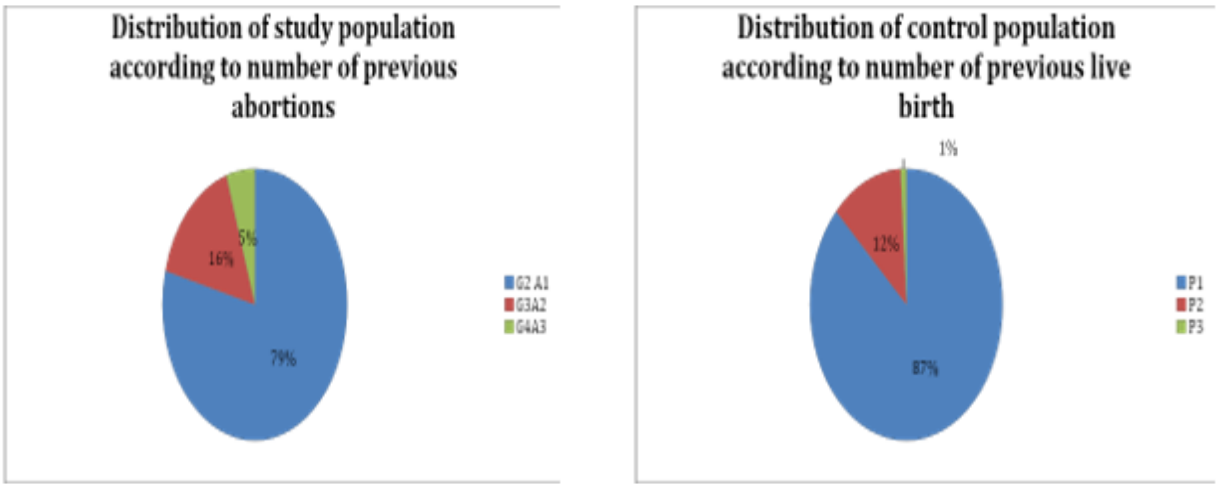


**Figure 1: Previous history**

In study group, 56% cases were delivered vaginally, 30% had Caesarean, Assisted breech delivery in 2% and 12% abortions whereas in control group 90% delivered vaginally followed by 6% were delivered by LSCS and 2% had breech delivery and abortion each. (p=0.001*).

Mean birth weight in Study group was 2.74 ± 0.51kg and in Control group 2.94 ± 0.45 kg. The difference between the two groups with regard to birth weight was found statistically significant. (p=0.002)

According to NICU admissions where in study group, 32.55% neonates and in control group, 4.08% had NICU admission. (p=0.0001*)

At 1 min. in study group, APGAR was 7.52 ± 1.40 whereas 8 ± 0.51 in control group. (p=0.002)

At 5 min. APGAR was 8.34 ± 0.98 in study group and 9 ± 0.37 in control group.(p=0.0001)

**Table 2: Outcome**

| **Mode of Delivery** | **Study group** | | **Control group** | | **P value** |
|---|---|---|---|---|---|
| | **N** | **(%)** | **N** | **(%)** | |
| LSCS | 30 | 30 | 6 | 6 | 0.0001* |
| Spontaneous Vaginal | 56 | 56 | 90 | 90 | |
| Abortion | 12 | 12 | 2 | 2 | |
| Assisted breech delivery | 2 | 2 | 2 | 2 | |
| **Birth weight** | 2.74 ± 0.51 | | 2.94 ± 0.45 | | 0.002* |
| **NICU** | | | | | |
| Yes | 28 | 32.55 | 4 | 4.08 | 0.0001* |
| No | 58 | 67.44 | 94 | 95.92 | |
| **APGAR Score** | | | | | |
| At 1 min. | 7.52 ± 1.40 | | 8 ± 0.51 | | 0.002* |
| At 5 min. | 8.34 ± 0.98 | | 9 ± 0.37 | | 0.0001* |

According to recurrence of abortion in study group. It shows, out of 12 abortions, 9 were in G2A1, 2 in G3A2 and 1 in G4A3 group. The incidence increases with increased number of previous abortions.

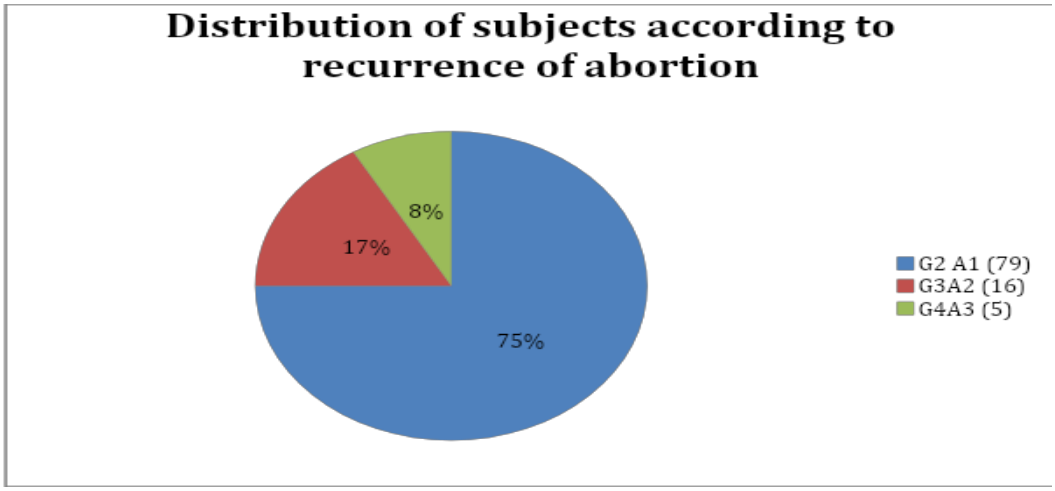


**Figure 2: Recurrence of abortion**

In study group,86% cases had live birth , 12% had abortion and 2% had IUD whereas in control group, 98% cases had live baby and 2% had abortion. (p=0.007)

In study group,86% cases had live birth , 12% had abortion and 2% had IUD whereas in control group, 98% cases had live baby and 2% had abortion. (p=0.007)

## Discussion

In our study, the majority of subjects were between the ages of 21 and 25 in both the study group (55%) and the control group (56%) while the minimum age range was between the ages of 31 and 35 in both the study group (5%) and the control group (4%) with a mean age of 23.68 3.36 years and 24.46 3.04 years, respectively. Both groups had similar age distributions. Similar findings were obtained in a research by Shree Kant Dadheech and colleagues.[4]

Maximum 79% of the cases in our study had one or less abortions, followed by 16% by two abortions, and a minimum of 5% by three abortions. Nehal N. *et al*.'s study produced similar findings.[5] Maximum 87% cases had h/o one live birth followed by 12% had h/o of 2 live birth minimum 1% had h/o 3 live births. Shubha C.R. *et al*.[6] produce similar results.

In our study, maximum 56% cases were delivered vaginally in study group followed by 30% LSCS and minimum 2% were assisted breech delivery and 12% had abortions whereas 90% delivered vaginally in control group followed by 6% by LSCS and 2% were breech delivery and abortion each ($p<0.05$). Pallavi R Gangatkar *et al*.[7] produce similar findings.

In our study, out of 12 abortions, 9 occurred in the G2A1 group, 2 in the G3A2 group, and 1 in the G4A3 group. The incidence rises as the number of prior abortions rises. The incidence of abortions after one, two, three, and four abortions was 9.4, 14.8, 20, and 100%, respectively, in a study by Swati Agrawal *et al*.[8] In the study group, the mean birth weight was 2.74 0.51 kg, while in the control group, it was 2.94 0.45 kg. The difference in birth weight between the two groups was found to be statistically significant (p=0.002*). Studies by Pallavi R. Gangatkar *et al*.[7] and Shubha C.R. *et al*.[6] produced similar findings.

In our study, neonates in the study group had NICU admission rates of 31.82% and 68.18%, respectively, while in the control group, NICU admission rates were 4.08% and 95.92%, respectively. A statistically significant difference was discovered between the two groups (p=0.0001*). Pallavi R. Gangatkar *et al*.'s study[7] produced similar outcomes.

The mean APGAR score at 1 minute in our study was 7.52 1.40 in the study group and 8 0.51 in the control group (p 0.05). In the study group, the mean APGAR score at 5 minutes was 8.34 + 0.98, compared to 9 + 0.37 in the control group (p 0.05). In a research by Pallavi R. Gangatkar *et al*.[7], similar findings were observed, with the mean Apgar score at 1 minute being 7.61 in the cases group and 8.06 in the control group. Apgar scores on average were 8.44 in cases and 8.77 in controls at 5 minutes (P 0.05).

In our study, 98% of neonates in the control group were alive while 2% underwent abortion, whereas 86% of neonates in the study group were still alive. A statistically significant difference was discovered between the two groups (p=0.007). Similar findings were made in a study by Shubha C.R. *et al*.[6], which discovered that cases of subsequent abortion had a 12.1% incidence rate compared to controls' 3.5%.

In our study, in maternal outcome in study group, 20% had PROM, 10% had IUGR, 3%

placenta previa and preeclampsia each, and 2% had breech delivery whereas in control group, 10% had PROM, 6% had IUGR, 1% preeclampsia and placenta previa each, and 2% breech delivery. Similar results were seen in study conducted by Shubha C.R. *et al*[6] where the incidence of preterm delivery was 31.2% in cases compared to 9.3% in controls. PROM occurred in 20.2% in cases compared to 7.3% in controls.

## Conclusion

According to the study's findings, the study group experienced an increase in poor maternal outcomes like PROM, placenta previa, IUGR, and preeclampsia. Additionally, the study found statistically significant neonatal unfavourable outcomes in the study group, including low birth weight, poor APGAR ratings, and an increase in NICU admissions. There was a noticeably higher incidence of LSCS in the study group. As the number of prior abortions rises, so does the likelihood of a repeat abortion.

Therefore, we draw the conclusion that any pregnancy with a history of spontaneous abortion should be treated as a high-risk pregnancy, and regular and careful antenatal checkups should be performed. With routine follow-up for screening of any difficulties, an elective caesarean section can be planned to prevent any further complications.

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