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Original Research Article

Pregnancy outcomes after spontaneous conception with previous spontaneous abortion preceding present pregnancy

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ABSTRACT

Background: The objective of the present study was to study pregnancy outcomes in patients with Spontaneous conception with history of previous spontaneous abortion preceding present pregnancy.

Methods: A prospective study included patients with spontaneous conception with history of previous spontaneous abortion preceding present pregnancy admitted in the department of obstetrics and gynecology, command hospital, Pune between October 2018 and April 2020. The patients were booked (minimum 3 visits in antenatal outdoor clinic) or admitted for the first time as an emergency. The detailed history about previous abortions was taken and routine as well as investigations for possible etiologies of previous abortions were done. Cases with history of mid-trimester abortion were investigated for cervical incompetence. All the patients were observed for complications during present pregnancy like threatened abortion, preeclampsia, preterm labour, intrauterine death and final outcome.

Results: A total of 110 patients with history of previous spontaneous abortion were admitted, all patients were booked. Majority (51.8 %) of patients belong to the age group 25-30 years. All patients were with history of previous one abortion followed by pregnancy with spontaneous conception. The final outcomes were term live birth (86.4%), abortion (8.2%), preterm delivery (5.4%), and no still birth. Caesarian section was done in 32.7% patients for various indications.

Conclusions: Previous history of spontaneous abortion is associated with adverse pregnancy outcome. There is increased risk of abortion, preterm delivery, need for caesarean sections and fetal loss in cases of previous spontaneous abortions. These complications and fetal loss can be reduced by booking the patients and giving due antenatal care.

Keywords: Spontaneous abortion, Preterm birth, Cesarean delivery, Spontaneous conception

INTRODUCTION

Spontaneous pregnancy loss is a common event, it is the most common complication of pregnancy. About 70% of human conceptions fails to achieve viability and an estimated 50% are lost before the 1st missed menstrual period.

It is considered that chromosomal abnormality is the most common cause of spontaneous abortion. More than 50% of spontaneous abortions are related to some genetic abnormality of the embryo.¹ Studies have shown that the

incidence rate of spontaneous abortion increases with the increase of pregnant women's age.²

There has been a prevailing concern about spontaneous pregnancy loss/induced abortion increasing the risk of adverse outcomes in future pregnancies. Many different adverse outcomes have been linked to miscarriages, such as increased risks of preterm birth, low birth weight, SGA infants, placental complications, ectopic pregnancy and miscarriages. At present the suspected mechanisms connecting miscarriages to adverse outcomes in following pregnancies include ascending infection after impairment of the anti-microbial defense mechanism because of

cervical trauma, mechanical trauma to the cervix leading to cervical incompetence and surgical damage to the endometrium, increasing the risk of abnormal placental implantation.³⁻⁸

Increase in the risk of abortion after a previous abortion is reported consistently, but the reported risks of recurrence differ considerably, and no generally accepted figures are available.⁹⁻¹²

In this study impact of spontaneous abortions on subsequent pregnancies will be observed in the form of recurrent abortion, influence of previous abortion on mode of delivery and neonatal outcomes in the form of low birth weight and stillbirth.

METHODS

The study type was prospective observational study. The study conducted from October 2018 to May 2020. The study was conducted at department of obstetrics and gynecology of command hospital, Pune.

Selection criteria

Pregnant women after spontaneous conception with history of spontaneous abortions, preceding present pregnancy, irrespective of gravidity were enrolled. Detailed history regarding previous abortion was taken and examination was done focusing on information about previous abortion all women were followed up till the postnatal period and pregnancy outcomes were charted.

Ethical approval

The ethical approval taken by the committee.

Primary and secondary objectives of the study are charted in table below. Primary objectives were term live birth, preterm live birth, spontaneous abortion whereas secondary objectives were cesarean delivery, stillbirth, placenta previa and low birth weight. Instrumental deliveries are also charted in the table.

RESULTS

A total of 110 patients with history of previous spontaneous abortion were admitted, all patients were booked. All patients were with history of previous one abortion followed by pregnancy with spontaneous conception. Most of the study population belongs to the age group of 25 to 30 years (51.8%) followed by less than 25 years (34.5%) and more than 30 years (13.6%). Most of the study population were nullipara (68.2%) followed by para 1 (28.2%) and para 2 (3.6%).

Most of the study population had 38 to 40 weeks of period of gestation (77.3%) followed by 36 to 37 weeks (12.7%) and less than 35 weeks (10%).

Table 1: Pregnancy outcomes amongst study population.

Pregnancy outcomes		Frequency	Percent (%)
Spontaneous abortion	S and E done	4	3.64
	S and E not done	5	4.55
Term live birth	Cesarean delivery	35	31.82
	Vacuum assisted vaginal delivery	2	1.82
	Vaginal delivery	58	52.73
Preterm live birth	Cesarean delivery	1	0.91
	Vacuum assisted vaginal delivery	0	0.00
	Vaginal delivery	5	4.55
Total		110	100.00

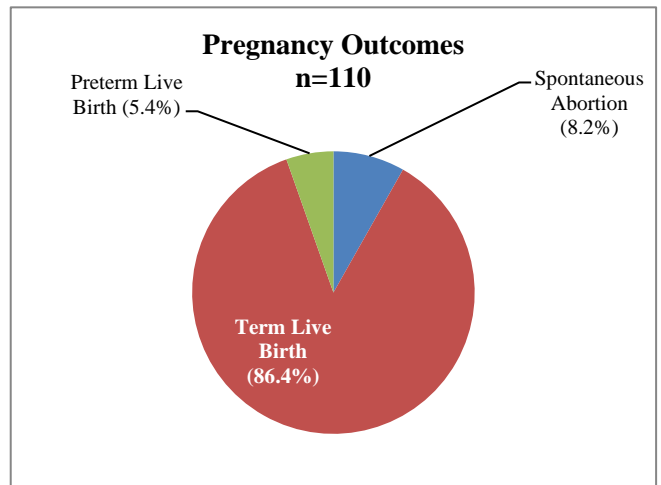


Figure 1: Pregnancy outcomes among study population.

The final outcomes were term live birth (86.4%), spontaneous abortion (8.2%), preterm delivery (5.4%).

Most of the study population had babies birth weight of 2.6 to 3 kg (40%) followed by 3 to 3.5 kg (28.2%) and less than 2.5 kg (17.3%). NICU admission was observed in 16.4% of study population.

In the present study, gestational diabetes was the most common comorbidities observed amongst study population (20.9%) followed by hypothyroidism (10%), h/o threatened abortion (7.3%) and post LSCS (6.4%).

Foetal distress was the most common indication of cesarean delivery (30.6%) followed by arrest of descent of head (11.1%), breech and failed TOLAC (8.3%) and failed induction and unfit for TOLAC (5.6%).

Cesarean delivery (48.3%) was the most common mode of delivery in subjects with history of suction and evacuation followed by vaginal delivery (41.4%) and vacuum assisted vaginal delivery (3.4%) and the difference was statistically significant (p=0.255)

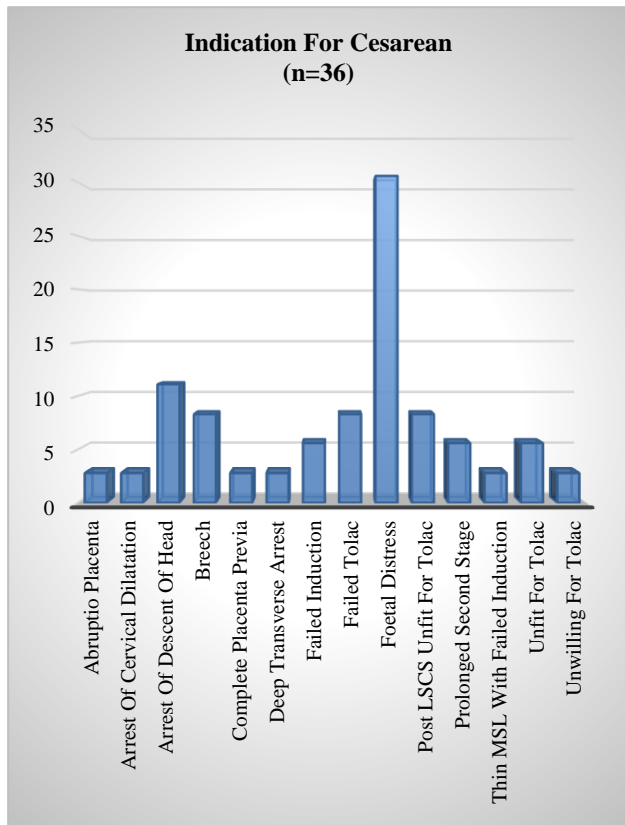


Figure 2: Indications for cesarean.

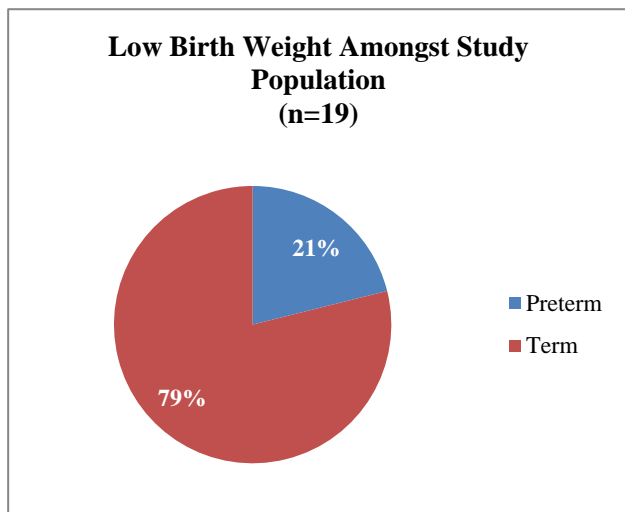


Figure 3: Low birth weight among study population.

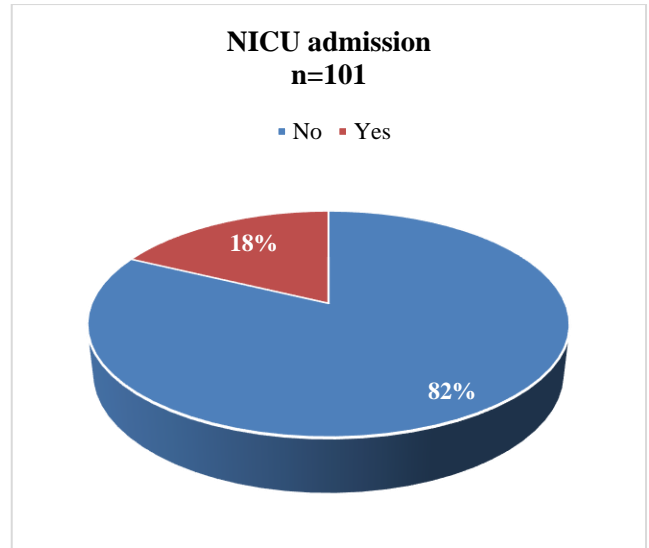


Figure 4: NICU admissions.

Table 2: Indication for cesarean amongst study population.

Indication for cesarean	No. of patients	Percent (%)
Abruptio placenta	1	2.8
Arrest of cervical dilatation	1	2.8
Arrest of descent of head	4	11.1
Breech	3	8.3
Complete placenta previa	1	2.8
Deep transverse arrest	1	2.8
Failed induction	2	5.6
Failed TOLAC	3	8.3
Foetal distress	11	30.6
Post LSCS unfit for TOLAC	3	8.3
Prolonged second stage	2	5.6
Thin MSL with failed induction	1	2.8
Unfit for TOLAC	2	5.6
Unwilling for TOLAC	1	2.8
Total	36	100.0

Table 3: Low birth weight amongst study population.

Low birth weight	Frequency	Percent (%)
Preterm	4	21.1
Term	15	78.9
Total	19	100.0

DISCUSSION

Our study was aimed to study pregnancy outcomes in 110 patients with history of previous spontaneous abortion preceding present pregnancy. Impact of previous

spontaneous abortion on pregnancy has been studied. All patients were booked cases at this hospital and there was no loss to follow up in any of the cases.

In our study, in subjects with history of suction and evacuation, spontaneous abortion was observed in 8.2% of subjects. In the study by Bakshi et al 20.4% of subjects had spontaneous abortion.¹³

In the present study, most of the study population belongs to the age group of 25 to 30 years (51.8%) followed by less than 25 years (34.5%) and more than 30 years (13.6%). Similarly in the study conducted by Abeysena et al it was observed that 89% were in the age group of 18 to 34 years.^{9,3} Study conducted by Adeniran et al reported that 434 (72%) of these study population were aged <35 years while 169 (28%) were aged ≥35 years of age. History of suction and evacuation was most commonly observed in 25 to 30 years of age group (41.1%) followed by less than 25 years (34.5%) and more than 30 years (24.1%) and the difference was statistically insignificant (p=0.050).¹⁴

In the present study, most of the study population were nullipara (68.2%) followed by para 1 (28.2%) and para 2 (3.6%). This was in agreement with the study conducted by Abeysena et al, in which three hundred and forty-one (46.2%) women were primiparous.¹⁵ Study conducted by Adeniran et al reported that 434 (72%) of these study population were aged <35 years while 169 (28%) were aged ≥35 years of age.¹⁴

In the present study, in patients undergone spontaneous abortion, S and E done was done in 3.64%, in term live birth patients. Cesarean delivery, vacuum assisted vaginal delivery and vaginal delivery was the mode of delivery in 31.82%, 1.8% and 52.73% respectively in term live births whereas in preterm live births, cesarean delivery, vacuum assisted vaginal delivery and vaginal delivery was the mode of delivery in 0.9%, 0% and 4.55% respectively. And the difference was statistically insignificant. These findings were in agreement with the study conducted by Agrawal et al in which mode of delivery was vaginal in 42 (70%), instrumental delivery in 4 (6.7%), and caesarian section was done in 14 (23.3%) patients. Foetal distress was the most common indication of cesarean delivery (30.6%) followed by arrest of descent of head (11.1%), breech and failed TOLAC (8.3%) and Failed Induction and unfit for TOLAC (5.6%).¹⁶ In our study there was no still birth and there was one case of placenta previa.

In the study by Bhattacharya et al, they found that women with a previous miscarriage were prone to adverse perinatal outcomes in the next pregnancy in comparison with; a) women who had a successful first pregnancy; and b) women with no previous pregnancies. Women with a previous miscarriage were at higher risk of threatened miscarriage and preterm delivery. They were more likely to have interventions during labor and delivery and their babies tended to be small for their gestational age.¹⁷

In our study, in subjects with history of suction and evacuation preterm live birth was observed in 6.9%. Previous studies on the influence of pregnancy loss on future risk of preterm birth are conflicting. There are relatively few studies with large sample sizes, and selection of the comparison groups and the parity of the women vary between studies. The risks of preterm birth and perinatal death were increased in women with a previous miscarriage and were markedly higher in cases of late miscarriage. Other complications that were inconsistently shown to be more common in these women include pre-eclampsia and bleeding in early pregnancy.^{18,19}

In the present study, most of the study population had babies birth weight of 2.6 to 3 kg (40%) followed by 3 to 3.5 kg (28.2%) and less than 2.5 kg (17.3%). Term live birth (86.1%) was the most common final outcome in subjects with history of suction and evacuation followed by preterm live birth (6.9%) and spontaneous abortion (6.9%) and the difference was statistically insignificant (p=0.891). In low-birth-weight babies, 78.9% babies were term and 21.1% were preterm. In our study, 17.3% babies were low birth weight out of which 78.9% babies were term and 21.1% were preterm. In the study by Thorn et al, only 5.8% of babies were low birth weight.²⁰ In the study by Bakshi et al, 26% babies were low birth babies.¹³

Limitation

Only booked cases are taken in the study so with proper antenatal care some impact of abortion on next pregnancy neutralized by appropriate measures. Pregnancies conceived by ART procedures are not taken into the study. Pregnancies irrespective of gravidity were enrolled.

CONCLUSION

Patients with previous history of spontaneous abortion are associated with increased adverse pregnancy outcome however this was not observed in the present study. Spontaneous abortion observed in 8.2% of the patients. Most of the babies were term live birth (86.4%) while preterm live birth occurred in 5.4%. No stillborn was observed. There was one case of placenta previa and one case of abruption placentae was observed, however statistically insignificant in relation to history of spontaneous abortion. Cesarean delivery was the commonest mode of delivery in patients with history of suction and evacuation followed by vaginal delivery. Foetal distress was the most common indication of cesarean delivery (30.6%) followed by arrest of descent of head (11.1%). In our study there was no significant impact of spontaneous abortion in nulliparous women as compared to existing studies. Pregnancy outcomes are not adversely influenced by the history of one spontaneous abortion preceding present pregnancy in the present study probably due to timely booking of the patients and regular antenatal care provided to them in a tertiary care centre.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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