International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Vijayalakshmi G et al. Int J Reprod Contracept Obstet Gynecol. 2023 May;12(5):1243-1247
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20231203

Original Research Article

Obstetric outcome of antenatal mother with history of spontaneous abortion attending a tertiary care hospital in Puducherry

Vijayalakshmi G., Jaget Nirmala*, Sindhuja Sekar G., Priyanka R.

Department of Obstetrics and Gynecology, Sri Venkateswaraa Medical College Hospital and Research Centre, Ariyur, Puducherry, India

Received: 12 March 2023
Accepted: 06 April 2023

***Correspondence:**
Dr. Jaget NIrmala,
E-mail: drnirmalajaget@yahoo.com

ABSTRACT

Background: The pregnancy time is critical for both the mother's and the baby's health. The most common unfavourable pregnancy outcome is spontaneous abortion. Spontaneous pregnancy loss is a surprisingly common event, with roughly 15% of all clinically diagnosed pregnancies ending in pregnancy failure. Couples who suffer from frequent miscarriages may find it difficult to cope physically and emotionally. This study was planned to evaluate the association of preterm delivery, low birth weight, IUGR, recurrence of abortion, still birth, IUD, PROM, or any other adverse outcome in patients with history of previous spontaneous abortions. Objectives were to look for association between previous spontaneous abortion and preterm delivery, low birth weight, IUGR, recurrence of abortion, stillbirth, IUD, PROM and other complications in subsequent pregnancies.
Methods: This was a prospective observational study done with 150 samples. The information such as demographic data of the antenatal women, clinical history, past obstetrics history, clinical examination, laboratory investigations and outcome of present pregnancy were collected and evaluated.
Results: Maternal complications such as UTI (4.6%), Infection and fever (5.3%), PROM (2.7%), PPH (4%), hyperemesis 4%, PPROM 2.7% were observed. In study population, 60% of the foetus were in cephalic position, 19% in breech presentation and 21% in shoulder presentation. 29% of the women had preterm delivery, 34% were delivered by LSCS and 6% had spontaneous abortions. Low birth weight babies delivered in 25% cases. Foetal distress was observed in 15%, FGR in 9%, still birth in 3% and IUD in 1%.
Conclusions: Women with previous spontaneous abortion are associated with a higher incidence of preterm delivery, cesarean section rate, neonatal low birth weight, fetal distress and high possibility of infection. Therefore, patients with previous spontaneous miscarriage represent a high-risk population for obstetric complication and close surveillance during the antenatal period is required.

Keywords: Preterm delivery, PROM, Recurrent pregnancy loss, Spontaneous abortion

INTRODUCTION

Spontaneous abortion is the most common gestational adversity and is often of unknown etiology. In most patients, it has a multifactorial cause such as chromosomal abnormalities, immunological, thrombophilia, endocrine or infectious causes and often difficult to determine.[1] Spontaneous abortion refers to pregnancy loss at less than 20 weeks gestation in the absence of elective medical or surgical measures to terminate the pregnancy. "Spontaneous pregnancy loss" has been recommended to avoid the term "abortion" and acknowledge the emotional aspects of losing a pregnancy.[1,2]

The generally accepted definition speculate that the embryo or foetus should weigh 500 grams or less, a stage that corresponds to gestational age of upto 20 weeks (WHO). Spontaneous pregnancy loss or miscarriage occurs in 15% of pregnancies.[3]

According to American Pregnancy Association (APA), 10-25% of all clinically recognized pregnancy end in miscarriage.[4]

Expectant management proved to be successful, with no need for surgical intervention in 82% to 96% of women. Most patients who had surgical intervention were followed expectantly for two weeks before intervention was recommended. Medical therapy with mifepristone or misoprostol does not confer significant additional benefit. On an average 9-10 days taken for complete abortion in expectant management.[5,6]

Cervical evaluation is not reliable for distinguishing between complete and incomplete abortion.[7,8] Transvaginal ultrasonography should be performed and is extremely reliable for finding products of conception, with a 90 to 100% sensitivity and 80% to 92% specificity.[8,9]

When the beta-hCG level is more than 1,500 mIU/ml (the discriminatory level), intrauterine pregnancy should be evident on transvaginal ultrasound.[10]

When the diagnosis of spontaneous abortion is uncertain, trending beta-hCG levels every 48 to 72 hours and repeating the pelvic ultrasound in 7-10 days are recommended.[11] Complete abortion is diagnosed in the case of resolving cramp and bleeding, either an open or closed cervical os and no intrauterine conception products on ultrasound.[12]

Use aspirin (75 mg daily) improves uterine perfusion, and useful in many undiagnosed implantation failures, hence recommended for use in cases of recurrent abortions.[12] Progesterone has showed significant reduction in miscarriage rates and a large multicenter study is currently going to assess the benefit of progesterone in unexplained recurrent miscarriage (evidence 1+).[13]

There are multiple studies available related to risk factors associated with spontaneous abortion. However, due to differences in lifestyle, behaviour and environmental circumstances, it is difficult to extrapolate all the causes in a women.[14] It is necessary to study of possible causes, investigations and treatment/mitigation of the main risk factors, in order to contribute to the reduction of spontaneous abortion rates. Considering the above factors our study aimed to determine the effect of previous spontaneous miscarriage on the outcome of the next pregnancy, which include preterm delivery, low birth weight, IUGR, recurrence of abortion, still birth, IUD, PROM, or any other adverse outcome in patients.

METHODS

Study design

Prospective observational study carried out in the department of obstetrics and gynecology, Sri Venkateshwaraa Medical College Hospital and Research Centre (SVMCH and RC), a tertiary care teaching hospital located in Ariyur, Pondicherry, India from March 2021 to August 2022.

Study population

The study comprised of pregnant patients with history of previous spontaneous abortion.

Sample size

A total of 150 samples were collected. Sample size was calculated using prevalence 15%, confidence interval 95%, margin of error 6%.

Inclusion criteria

History of spontaneous abortion, irrespective of cause and period of gestation were included. Age group 18 to 35 years. Patients with 1 or more than 1 spontaneous abortion.

Exclusion criteria

Patients with induced abortion. Spontaneous abortion with twin gestation. Patients with PIH, Chronic hypertension, GDM, heart disease, anemia. Patients with carcinoma. Patients with HIV/HBsAg/VDRL/twin gestation. Conception with ART.

Sampling technique

Non probability sampling, a hospital-based study. Patients with history of spontaneous abortion preceding present pregnancy irrespective of gravidity, first visit or booked were enrolled randomly. Detailed history regarding previous abortion was taken and examination was done focusing on information about previous abortion.

Data collection methods

Scientific research committee clearance and institutional human ethical committee clearance was obtained. Data collection was done by the principal investigator by using proforma containing demographic data of the antenatal women, clinical history, past obstetrics history, clinical examination, laboratory investigations and outcome of present pregnancy.

Statistical methods

Data was entered in Microsoft Excel sheet and analysed using SPSS software version 23.0. Statistical test used was chi square test, p value less than 0.05 was statistically significant.

RESULTS

It was a prospective observational study carried out in department of obstetrics and gynecology, Sri

Venkateshwaraa Medical College Hospital and Research Centre (SVMCH and RC), a tertiary care teaching hospital. 150 antenatal women who came for regular antenatal check-up and who has history of earlier spontaneous miscarriage were included in this study.

Table 1: Age distribution of study group.

Age (years)	Frequency	Percentage
≤20	26	17
21 to 30	69	46
≥31	55	37
Total	150	100
Mean±SD	26.18±4.12	

Most of the women were in the age group of 21 to 30 (46%) and the mean age of the study group was 26.18 years.

Table 2: Distribution of maternal complications.

Maternal complications	Frequency	Percentage
UTI	7	4.6
Infection and fever	8	5.3
PROM	4	2.7
PPH	6	4
hyperemesis	6	4
PPROM	4	2.7
No complications	115	76.7
Total	150	100

Maternal complications such as UTI (4.6%), infection and fever (5.3%), PROM (2.7%), PPH (4%), hyperemesis 4%, PPROM 2.7% were observed.

Table 3: Distribution of mode of delivery.

Mode of delivery	Frequency	Percentage
Normal	92	66
LSCS	50	34
Total	142	100

66% of them had normal delivery and 34% of women delivered by LSCS.

Table 4: Distribution of maternal outcome.

Maternal outcome	Frequency	Percentage
Preterm	44	29
Abortion	8	5
LSCS	48	32

29% of the women had preterm delivery, 34% had LSCS and 6% abortion were noted.

Low birth weight was observed 25% followed by fetal distress 15%, FGR 9%, still birth 3% and IUD 1%.

Table 5: Distribution of fetal outcome.

Fetal outcome	Frequency	Percentage
IUD	2	1
FGR	14	9
Fetal distress	23	15
Still birth	4	3
LBW	38	25

DISCUSSION

Spontaneous abortion refers to pregnancy loss at less than 20 weeks gestation in the absence of elective medical or surgical measures to terminate the pregnancy. The term "miscarriage" is synonymous and often is used with patients because the word "abortion" is often associated with elective termination.[3]

The present study was aimed to evaluate the outcome in 150 patients with history of previous spontaneous abortions. Most of the women were in the age group of 21 to 30 (46%) followed by >30 (37%) and <21 (17%) and the mean age of the study group was 26.18 years. In our study foetal outcome observed as low birth weight was observed in 25% cases, fetal distress in 15%, FGR in 9%, still birth in 3% and IUD in 1%. Jivraj et al studied a total of 162 pregnancies which progressed beyond 24 weeks gestation in women with a history of recurrent miscarriage, there were four perinatal deaths and 16 babies were admitted to the special care baby unit.[15] The rates of preterm delivery was (13%), small-for-gestational age (13%), perinatal loss (2.5%) and Caesarean section (36%) were significantly ($p<0.05$) higher than those of the control group (3.9, 2.1, 1 and 16.7% respectively). Agrawal et al observed outcomes in the patients with previous abortion were term live birth in (74.3%), abortion in (14.3%), preterm delivery in (8.6%), and still birth in (2.8%).[16] In the present study 10 (14.3%) pregnancies ended with abortion, out of which 4 were booked and 6 were unbooked patients[17]. Live births occurred in 90% of booked mothers whereas 70% in unbooked patients. Delivery by caesarean section was done in 23.3% patients for various indications.

Kashanian et al reported the fetal outcome 1.5% had fetal distress, 14% preterm delivery, 8.5% low birth weight and low Apgar score respectively.[17] Among maternal outcome the author also reported PROM in 13.5%, abortion in 16.5% and the author also observed maternal complications like breech presentation in 4.5% pregnancies, vaginal bleeding in 19%. A study conducted by Nehal et al reported that pregnancy complications including threatened miscarriage, premature rupture of membranes (PROM), preterm delivery, intra uterine growth restriction (IUGR) are more commonly associated with pregnancy following history of previous abortion.[18] Rate of caesarean section was significantly increased in women with previous spontaneous abortion and significant p value <0.0001 reported.

Our study reported 4.6% had UTI and 5.3% reported infection with fever. The role of infection in spontaneous abortion is unclear, and for any infective agent to cause spontaneous abortion, it must be capable of persisting in the genital tract, avoid detection. Nelson et al reported bacterial vaginosis is a risk factor for second-trimester miscarriage, and preterm labour (PTL) and they reported that treatment of bacterial vaginosis early in the second trimester significantly reduces the incidence of second-trimester miscarriage, and PTL.[19] Agrawal et al in their study reported 35.8% patients showed different complications like threatened abortion, pre-eclampsia, antepartum hemorrhage, preterm labour and intrauterine death.[20] The abortions and still birth were more in emergency patients as compared to booked patients. The author also found that risk of abortions increases with increasing number of previous pregnancy losses. The incidence of miscarriage was found to be 9.4%, 14.8%, 20% and 100% after one, two, three and four abortions respectively.

CONCLUSION

Women with previous spontaneous abortion are associated with a higher incidence of preterm delivery, caesarean section rate, neonatal low birth weight, fetal distress and high possibility of infection. Therefore, patients with previous spontaneous miscarriage represent a high-risk population for obstetric complication and close surveillance during the antenatal period is required. Since spontaneous abortion can occur across multiple settings, including home, clinic, and hospital, team-based care is essential. Emergency department providers must ensure the seamless transfer of medical records, including relevant labs and imaging, to outpatient clinics for appropriate follow-up. In the outpatient setting, convenient scheduling of frequent appointments is critical, as well as clear instructions should be given to patients about when to present to the clinic or emergency department for persistent symptoms.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. WHO: recommended definitions, terminology and format for statistical tables related to perinatal period. Acta Obstet Gynecol Scand. 1977;56:247-53.
2. Brigham SA, Conlon C, Farquharson RG. A longitudinal study of pregnancy outcome following idiopathic recurrent miscarriage. Hum Reprod. 1999;14:2868-71.
3. Paz JE, Otano L, Gadow EC, Castilla EE. Previous miscarriage and stillbirth as risk factors for other unfavourable outcomes in the next pregnancy. Int J Obstet Gynecol. 1992;99(10):808-12.
4. Kline J, Stein Z. Spontaneous abortion (miscarriage). In: Bracken MB, ed. Perinatal Epidemiology. New York: Oxford University Press; 1984:23-51.
5. Whitcomb BW, Schisterman EF, Klebanoff MA, Baumgarten M, Luo X, Chegini N. Circulating levels of cytokines during pregnancy: thrombopoietin is elevated in miscarriage. Fertil Steril. 2008;89(6):1795-802
6. Farquharson RG, JauniauxE, Exalto N; ESHRE Special Interest Group for Early Pregnancy (SIGEP). Updated and revised nomenclaturefor description of early pregnancy events. Hum Reprod. 2005;20(11):3008-11.
7. Zhou H, Liu Y, Liu L, Zhang M, Chen X, Qi Y. Maternal pre-pregnancy risk factors for miscarriage from a prevention perspective: a cohort study in China. Eur J Obstet Gynecol Reprod Biol. 2016;206:57-63.
8. Nery IS, Gomes IS. Motives and feelings of women about miscarriage Methodology Theoretical Reference. Nurse Obstet. 2014;1(1):19-24.
9. Diejomaoh MFE. Recurrent spontaneous miscarriage is still a challenging diagnostic and therapeutic quagmire. Med Princ Pract. 2015;24(1):38-55.
10. O'Dwyer V, Monaghan B, Kennelly MM, Turner MJ, Farah N. Miscarriage after sonographic confirmation of an ongoing pregnancy in women with moderate and severe obesity. Obes Facts. 2012;5:393-8.
11. Hure AJ, Powers JR, Mishra GD, Herbert DL, Byles JE, Loxton D. Miscarriage, preterm delivery, and stillbirth: large variations in rates within a cohort of australian women. PLoS One. 2012;7(5):1-8.
12. Parveen F, Shukla A, Agarwal S. Cytokine gene polymorphisms in northern Indian women with recurrent miscarriages. Fertil Steril. 2013;99(2):433-40.e2.
13. Kazerooni T, Ghaffarpasand F, Asadi N, Dehkhoda Z. Correlation between thrombophilia and recurrent pregnancy loss in patients with polycystic ovary syndrome: a comparative study. J Chinese Med Assoc. 2013;76(5):282-8.
14. Tang AW, Alfirevic Z, Quenby S. Natural killer cells and pregnancy outcomes in women with recurrent miscarriage and infertility: a systematic review. Hum Reprod. 2011;26(8):1971-80.
15. Jivraj S, Anstie B, Cheong YC, Fairlie FM, Laird SM, Li TC. Obstetric and neonatal outcome in women with a history of recurrent miscarriage: a cohort study. Hum Reprod. 2001;16(1):102-6.
16. Agrawal S, Khoiwal S, Jayant K, Agarwal R. Predicting adverse maternal and perinatal outcome after threatened miscarriage. J Obstet Gynecol. 2014;04(01):1-7.
17. Kashanian M, Akbarian AR, Baradaran H, Shabandoust SH. Pregnancy outcome following a previous spontaneous abortion (miscarriage). Gynecol Obstet Investig. 2006;61(3):167-70.
18. Nehal N, Sawant V. Pregnancy outcome following previous history of spontaneous abortion. Obset Rev J Obstet Gynecol 2019;5(1):53-8.

19. Nelson DB, Bellamy S, Nachamkin I, Ness RB, Macones GA, Allen-Taylor L. First trimester bacterial vaginosis, individual microorganism levels, and risk of second trimester pregnancy loss among urban women. Fertil Steril. 2007;88(5):1396-403.
20. Agrawal S, Khoiwal S, Jayant K, Agarwal R. Predicting adverse maternal and perinatal outcome after threatened miscarriage. J Obstet Gynecol. 2014;04(01):1-7.

Cite this article as: Vijayalakshmi G, Jaget N, Sekar SG, Priyanka R. Obstetric outcome of antenatal mother with history of spontaneous abortion attending a tertiary care hospital in Puducherry. Int J Reprod Contracept Obstet Gynecol 2023;12:1243-7.