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RESEARCH ARTICLE

TO DETERMINE THE PREGNANCY OUTCOMES IN PATIENTS WITH PREVIOUS SPONTANEOUS ABORTIONS

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Abstract

Aim: To determine pregnancy outcomes in previous spontaneous abortions.

Objectives:

1.To test whether previous unfavourable pregnancy outcome increases the risk of adverse outcome in subsequent pregnancies.

2. To look for the association between previous spontaneous abortions with adverse maternal outcomes like Prom, Preterm delivery ,abortions ,placental complications and neonatal outcomes like Low birth weight ,IUGR,IUD and stillbirth in future pregnancies.

Materials and method: 200 pregnant women with history of upto 3 previous spontaneous abortion were in study group .200 pregnant woman with history of previous normal deliveries were considered in control group. This is a prospective study undertaken to compare the obstetric outcome between two groups .Study conducted at our tertiary care centre in department of obstetrics and gynaecology at Smt.KashibaiNavale medical college and hospital,Narhe, Pune, for period of 6 months from Aug.2021 to Jan.2022.

The outcome has been analysed with respect to following factors:

1. Age distribution of Subjects. 2. Full term deliveries 3.Preterm deliveries.4.Abortions
5.LSCS 6.PROM 7.IUGR8.LBW. 9. IUD.

Results: With increase in number of previous abortions the rate of preterm delivery ,abortions LSCS were found to be increased. P values of these were of statistical significance.

Conclusion: Previous abortions have definite impact on future pregnancy outcomes hence careful antenatal care is mandatory for early detection of possible complications.

Introduction:-

In early pregnancy spontaneous expulsion of ovum is nearly always preceded by death of foetus .For this reason consideration of aetiology of abortion practically resolves itself into determining the cause of death. In later months the foetus is born alive and other factor must be looked for to explain its expulsion[1]

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In early pregnancy miscarriage is common event. Mostly the cause is genetics thus opportunity of prevention is small. Pregnancy plays a unique role in the transformation of women towards completeness. In a woman's life pregnancy should is considered as a normal physiological event .However there are many twists and turns in few cases which alter the good outcome of pregnancy into disaster.[2]

The word abortion derived from the latin word meaning aboriri means miscarry.[2]

WHO defines abortion as pregnancy loss before 20 wks gestation <500 gm. These criteria being contradictory because mean birth weight of 20 wks foetus is 320 gm, 500 gm is mean weight for 22-24 weeks gestation.[1]

ACOG defines it as Non viable intrauterine pregnancy with either empty g sac or g sac containing embryo or foetus with absent cardiac activity in first 5-6 wks of gestation [1]

It may be spontaneous or induced termination of pregnancy it thus is appropriate to use term abortion and miscarriage interchangeably. Spontaneous abortion is divided into threatened, inevitable , complete, incomplete, missed ,septic abortions. More than 80% of spontaneous abortion occur within first 12 weeks of gestation incidence ranges from 11-22% [1]

In subsequent pregnancies there is high risk of adverse outcomes like low birth weight, small for gestational age, intra uterine growth retardation, preterm labour.There is increase chances of placenta previa, placental abruption and Cesarean delivery rate.[1]

Maternal factors: Infections ,Medical disorders like uncontrolled diabetes, thyroid disorder and systemic lupus erythematous,thrombophilia,Nutritional factors like Obesity , Occupational,Social, behavioural and environmental factors. Radiation and chemotherapy factor as well. Fetal factors include chromosomal abnormalities: Trisomy 13,16,18,21 are common compared to Monosomy X and Triploidy 9 and 11% respectively.[1]

Hence pregnancies with prior history of spontaneous abortions should be considered as high risk pregnancy and extra precautions should is given during antenatal period anticipating this outcomes.

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All antenatal patients with age group of 18-35 years coming to OPD with previous history of spontaneous abortions irrespective of gravidity, booked or fist visit were considered. Pregnant woman with history of chronic hypertension ,juvenile diabetes, anaemia, autoimmune disease, heart disease multi-fetal pregnancy and with history of previous induced abortions were excluded.

These woman were followed up till delivery and their obstetric and neonatal outcomes were noted.

Informed consent taken patient willing to participate were randomly selected as per inclusion and exclusion criteria. Detailed history taking regarding age, religion, occupation, chief complaints, history of present illness ,menstrual history, obstetric history, past history, personal history and general examination per abdominal examination done .Routine lab investigations like Complete blood count ,blood group, Serology ,urine routine microscopy, Sr.TSH, HBA1C, APLA, cervical length measurement for cervical incompetency in patients with history of mid trimester abortions ,Ultrasound in some cases were carried out. Those who got admitted their per abdominal examination, per vaginal examination and pelvic assessment was done.All routine labour room protocol was followed.

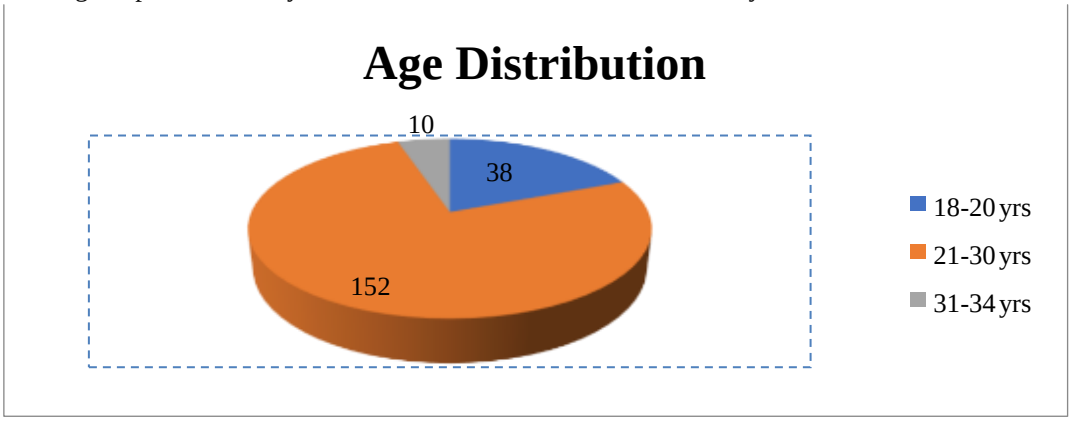
Observations And Results:-

Age Distribution

Table 1:-

Age Groups	Study cohort N=200		Control cohort N=200	
18-20	38	19%	38	19%
21-30	152	76%	152	76%
31-34	10	5%	10	10%
Total	200	100	200	100

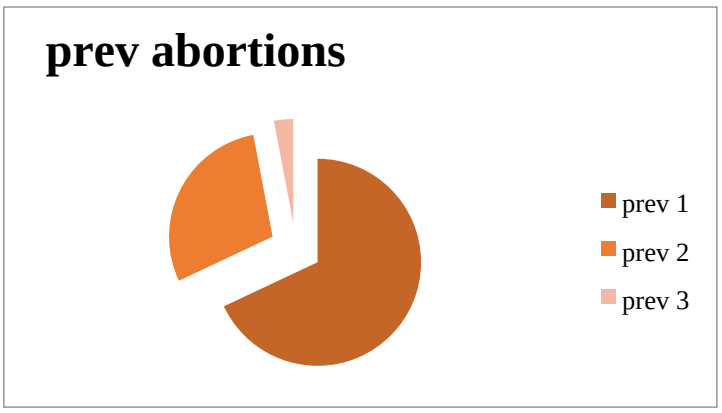
Mean age of patient in study cohort and control cohort between 21-30 years



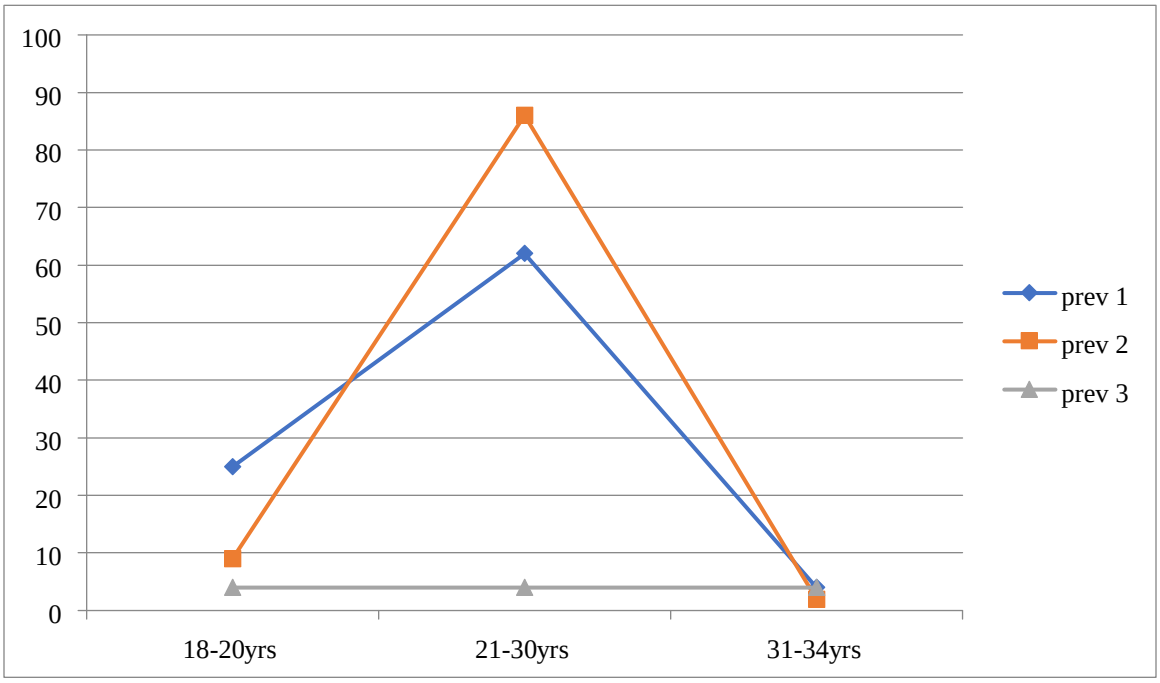
Distribution of study cohort with No. of previous abortions

Table 2:-

Previous abortions	N=200	Percentage %
Previous 1	136	68%
Previous 2	58	29%
Previous 3	6	3%
Total	200	100



Graph representing relationship between Age and previous spontaneous abortions



Age group	Previous 1	Previous 2	Previous 3
18-20 yrs	25	9	4
21-30 yrs	62	86	4
31-34 yrs	3	3	4

Table No3:- Risk factors associated with previous abortions:

Risk Factors	Gestational Hypertension	Oligo-hydroamnios	Gestational. Diabetes mellitus	Hypothyroidism	Pre-eclampsia
G2A1	7%	6%	4%	10%	3%
G3A2	24%	20%	20%	13%	5.5%
G4A3	32%	16%	16%		32%

Graph represents that with increase in number of previous spontaneous abortions the obstetric complications risk increases.

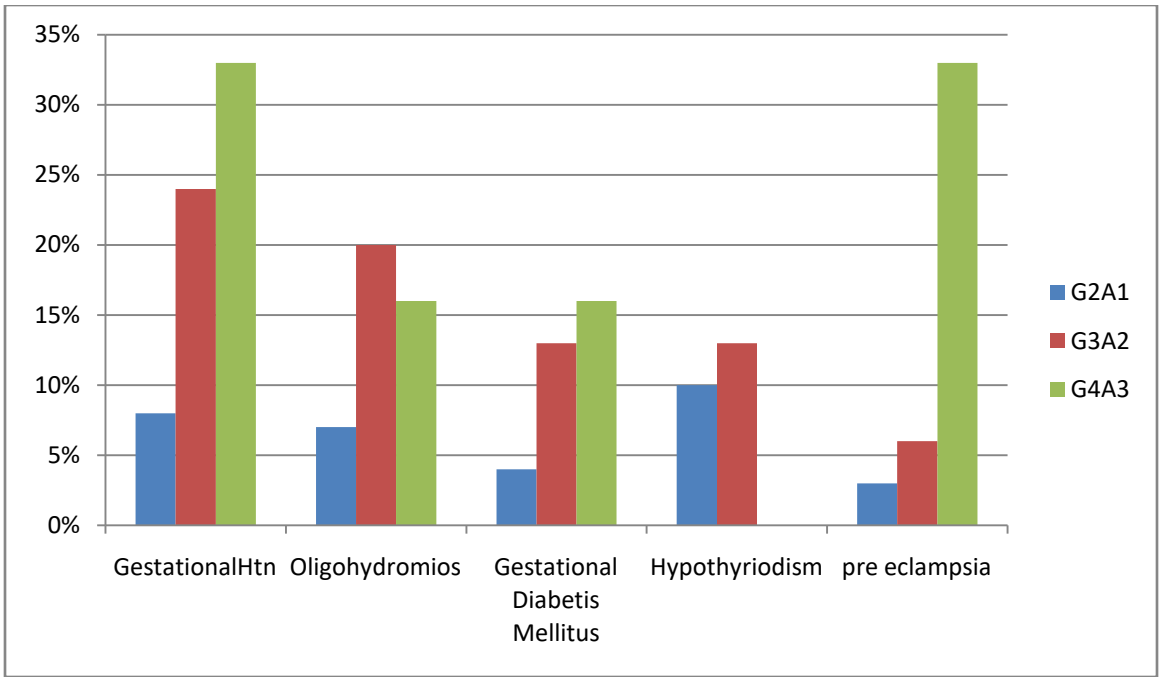


Table 4:- Obstetric outcomes between two cohorts.

Outcomes	Study cohort N=200		Control cohort N=200		P value
Full term	140	70	178	89%	<0.00001
Preterm	30	15%	8	4%	<0.0001
1 trimester abortions	18	9%	8	4%	0.04
2 nd trimester abortions	4	2%	3	1.5%	0.7
IUD	8	4%	3	1.5%	0.24
Total	200	100	200	100	

The above table shows that Patients who reached full termamong the control cohort were 89% and study cohort were 70%, p value <0.0001 which is statistically significant. Patients who deliveredpreterm were 4%of the control group and 15% of the study group which is statistical significance .9% patient of study group and 4% of the control group had first trimester abortions. p value being 0.04 which is statistically significant.2% second trimester abortion and 4% were IUD in study group with no statistical significance.

Graph representing outcomes between to cohort :

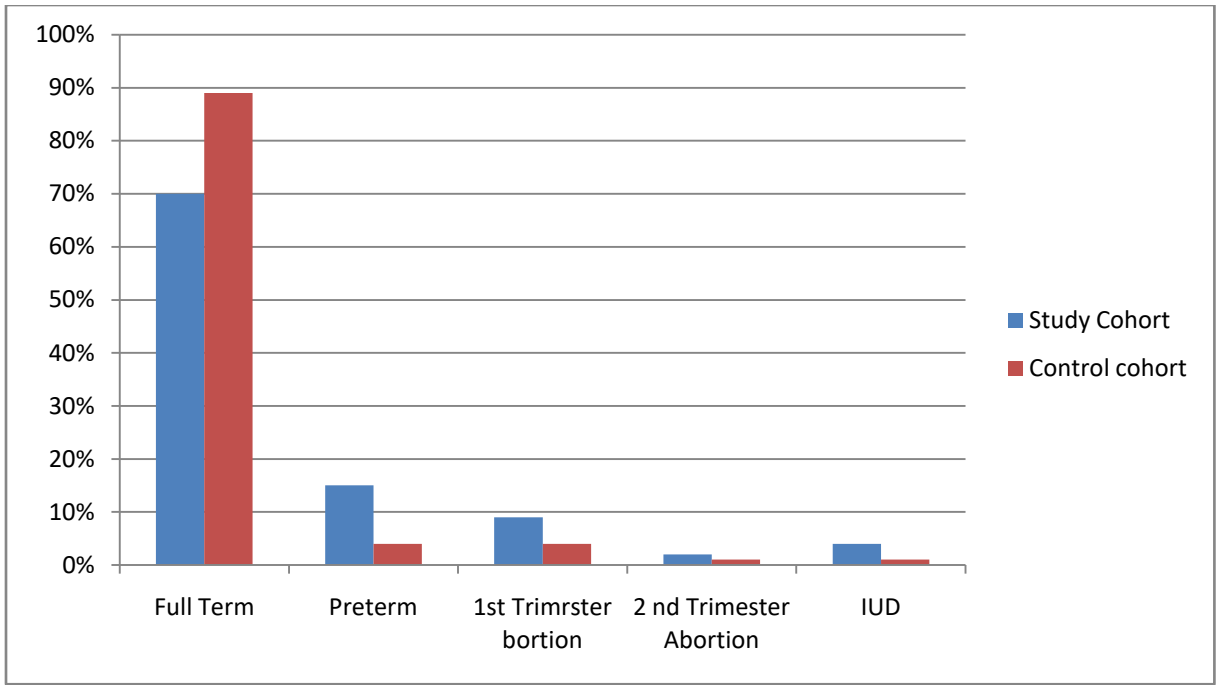
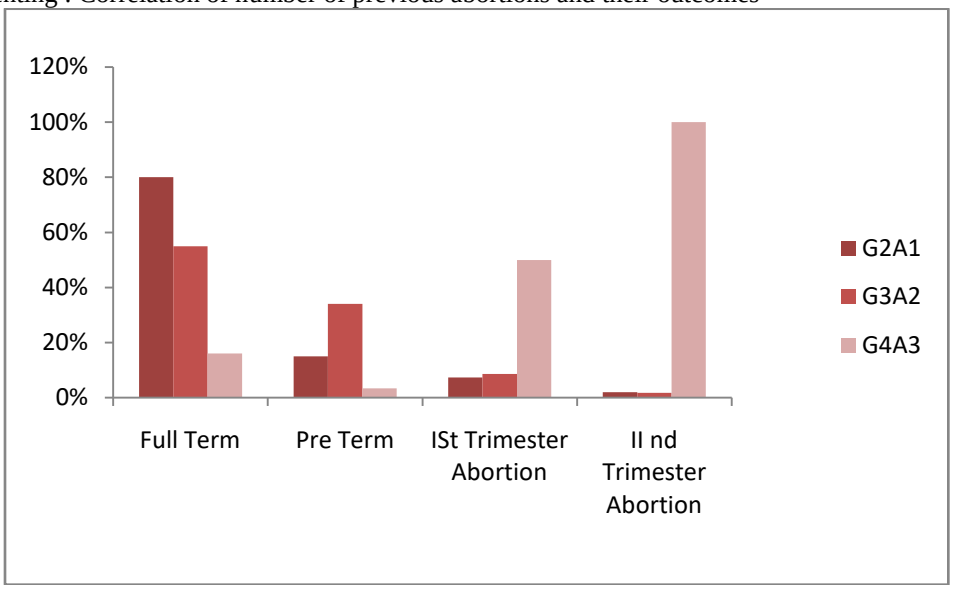


Table 5:- Correlation of previous number of abortions and their outcomes:

Outcomes	Full Term	Pre Term	Ist Trimester Abortion	II nd Trimester Abortion
G2A1	80%	15%	7.3%	2%
G3A2	55%	34%	8.6%	1.7%
G4A3	16%	3.4%	50%	0

80% G2A1 ,55% G3A2 ,16% G4A3 had full term delivery. 15% G2A1, 34% G3A2, 3.4% G4A3 had preterm deliveries. 7.3% G2A1, 8.6 G3A2, 50% G4A3 had first trimester abortions. 2% G2A1,1.7% G3A2 had second trimester abortions

Graph representing : Correlation of number of previous abortions and their outcomes

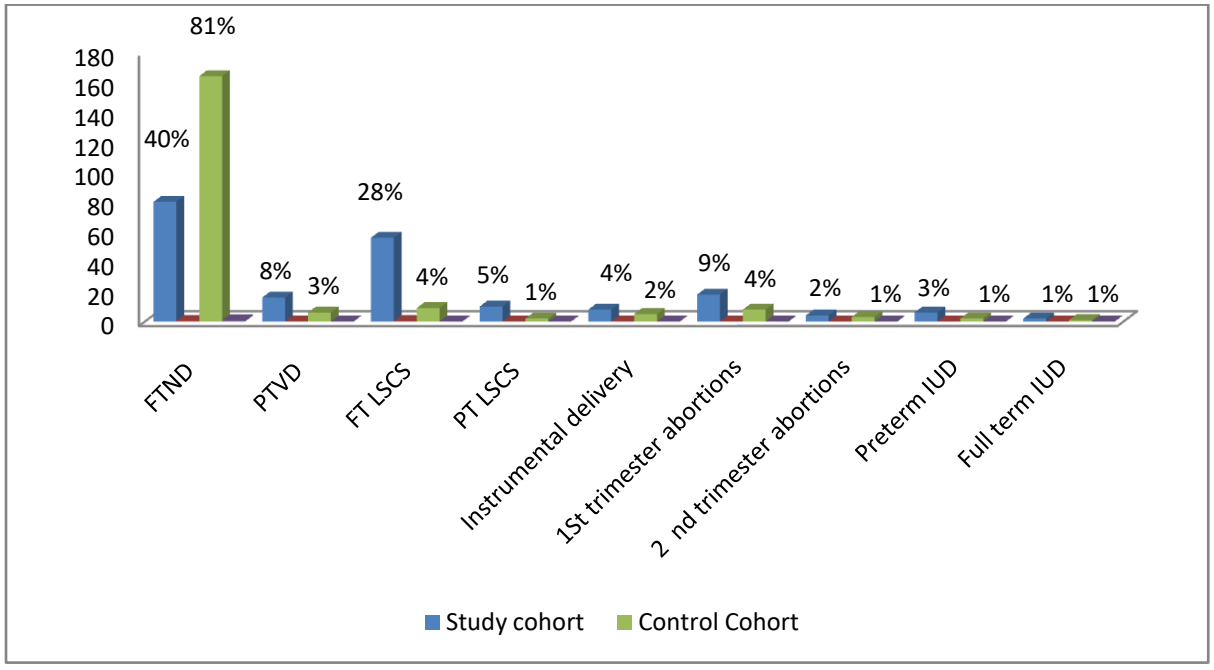


we can conclude that with increase in number of previous spontaneous abortions the chances of preterm delivery and abortions increases.

Table 5:- Mode of Termination of pregnancy.

Mode of termination of pregnancy	Study cohort N=200		Control cohort N=200		P value
FTND	80	40%	164	81%	<0.00001
PTVD	16	8%	6	3%	0.02
FT LSCS	56	28%	9	4%	<0.00001
PT LSCS	10	5%	2	1%	<0.01
INSTRUMENTAL DELIVERY	8	4%	5	2%	0.24
SPONTANEOUS ABORTIONS	18	9%	8	4%	0.04
ANOMALOUS/ SECOND TRIMESTER ABORTIONS	4	2%	3	1%	0.8
PRETERM LABOR WITH IUD	6	3%	2	1%	0.05
TERM LABOR WITH IUD	2	1%	1	1%	0.56
TOTAl	200	100	200	100	

40% and 81% of study cohort and control cohort had full term normal deliveries respectively.8% had Preterm normal deliveries in study and 3% deliveries in the control cohort. 28% of study cohort and 4% of control cohort underwent FT LSCS respectively.5% of the study cohort and 1% of the control cohort had PT LSCS. 9% study cohort 4% control cohort had spontaneous abortions.3% of study cohort had preterm IUD.



Full term normal delivery p value <0.00001 ,Preterm vaginal delivery P vale 0.02,

P value is <0.00001 for FT LSCS and <0.01 for PTLSCS,Spontaneous abortions p value is 0.04,Preterm Labour with IUD p value is 0.05 all p values shows statistical significance.

Table 6:- Showing indications of Cesarean section :

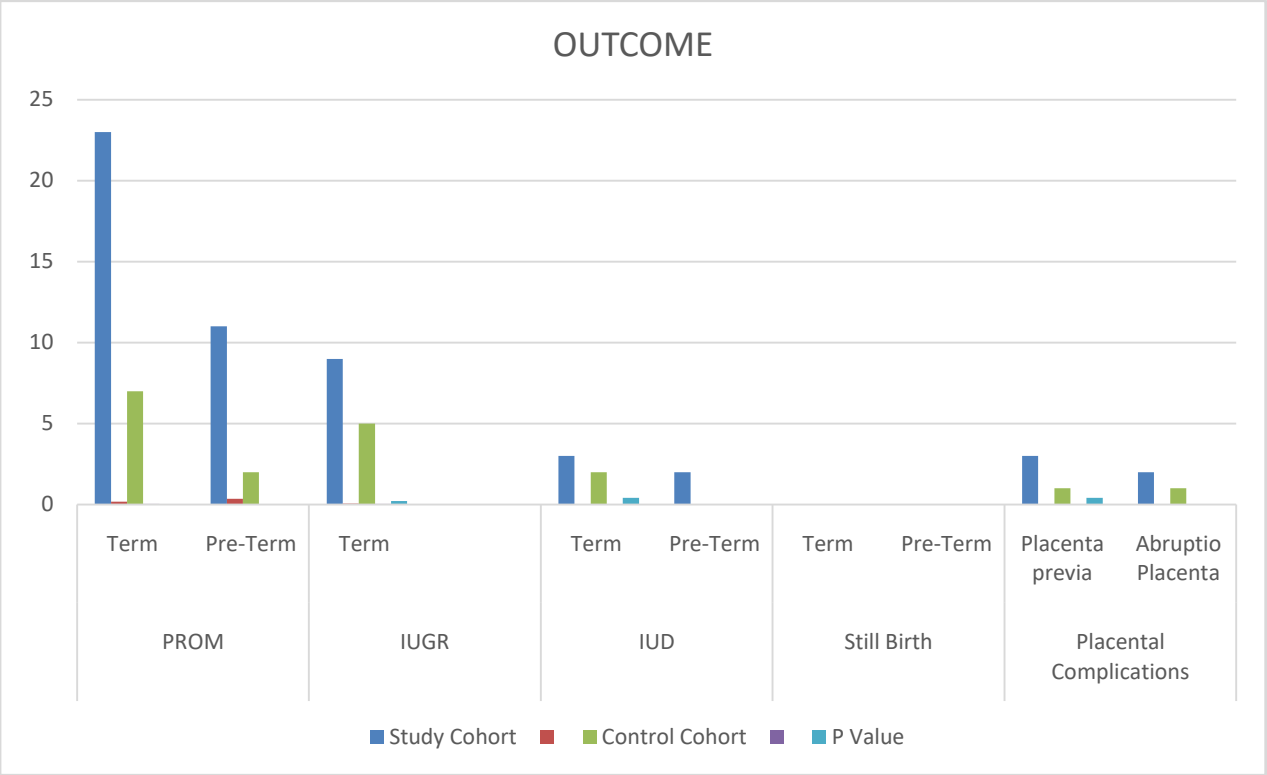
Indications Of LSCS	Study cohort No.	Study cohort %	Control cohort No.	
Fetal Distress	30	15%	5	2.5%
Breech presentation	2	1%	2	1%
Face/brow presentation	2	1%	2	1%
Cpd	5	2.5%		
Failure of induction	8	4%		
Non progress oflabour	6	3%		
Prolonged Prom	6	3%		
Obstructed Labour	2	1%		
Cord presentation	0			
Abruptio placenta	2	1%	2	1%
Placenta Previa	3	1.5%		
Total	66	33%	11	5.5%

Table no 7:- Comparison of Adverse outcomes between two cohorts:

Outcomes		Study cohort		Control cohort		P value
PROM	Term Pre term	23 11	16% 34%	7 2	3.5% 1%	0.01
IUGR	Term	9	4.5%	5	2.5%	0.2
IUD	Term Pre Term	6 2	3% 1%	2 0	1%	0.6
Still birth	Term Pre Term	0 0		0 0		
Placental complications	Placenta previa Abruptio placenta	3 2	1.5% 1%	1 1	1% 1%	0.4

Graph representing adverse outcome in two cohorts.

16% patients among study group had PROM and 34% had PPROM compared to control group 3.5% PROM and 1% PPROM p value <0.01 statistically significant.



Outcome		Study cohort			
		Total	G2A1	G3A2	G4A3
PROM	Term Pre term	23 11	11% 3%	10% 6%	16% 33%
IUGR	Term Preterm	9 0	2% 0	6% 0	33% 0
IUD	Term Pre Term	6 2	0 3%	3% 2%	0 16%
Still birth	Term Pre Term	0 0	0 0	0 0	0 0
Placental complications	Placenta previa Abruptio placenta	3 2	0.70% 0.70	3% 1.7%	0 0

Table 8:- Correlation of Obstetric indices and adverse outcome among study cohort.

With increase in number of previous Spontaneous abortions the risk of IUGR PROM PPROM IUD increases 16% of G4A3,11% of G2A1,10% 0f G3A2 had PROM.33% of G4A3,6% of G3A2 and 3% of G2A1 had PPROM.33% G4A3 had IUGR.6% G3A2 and 2% G2A1 had IUGR.3% G3A2 had term IUD and 3% of G2A1 2% G3A2 16% G4A3 preterm IUD

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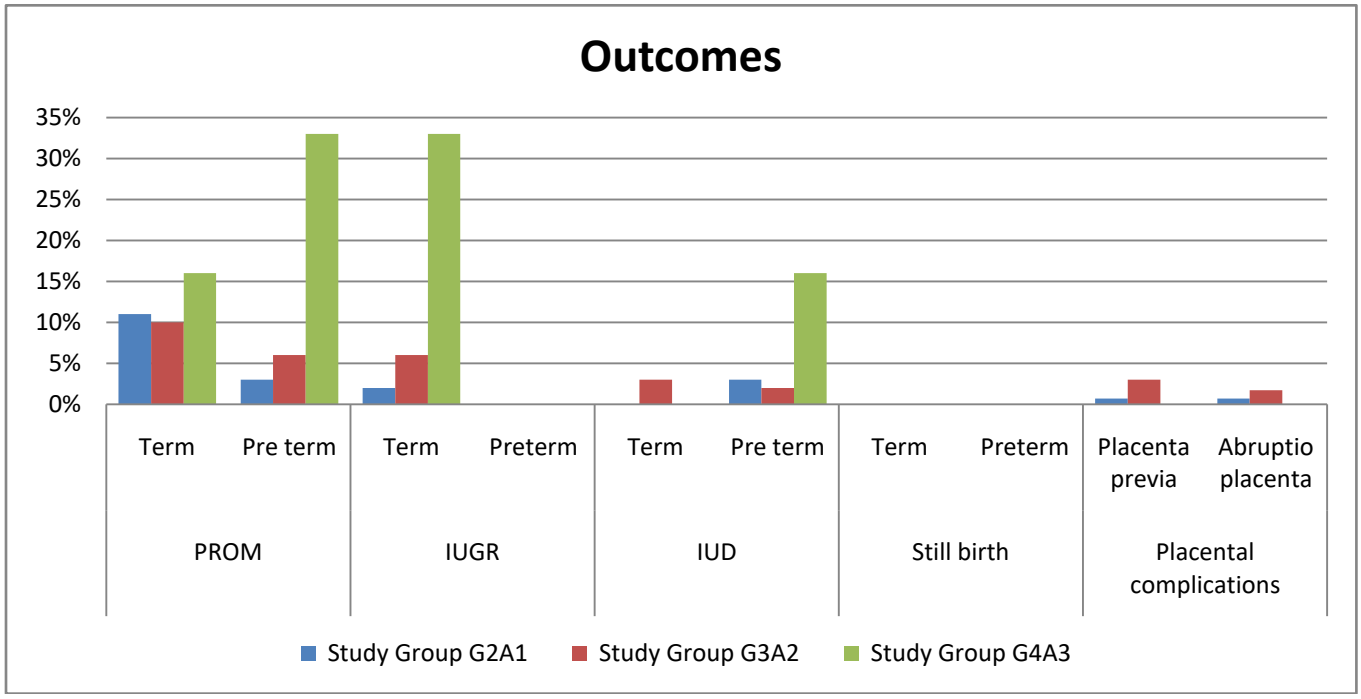
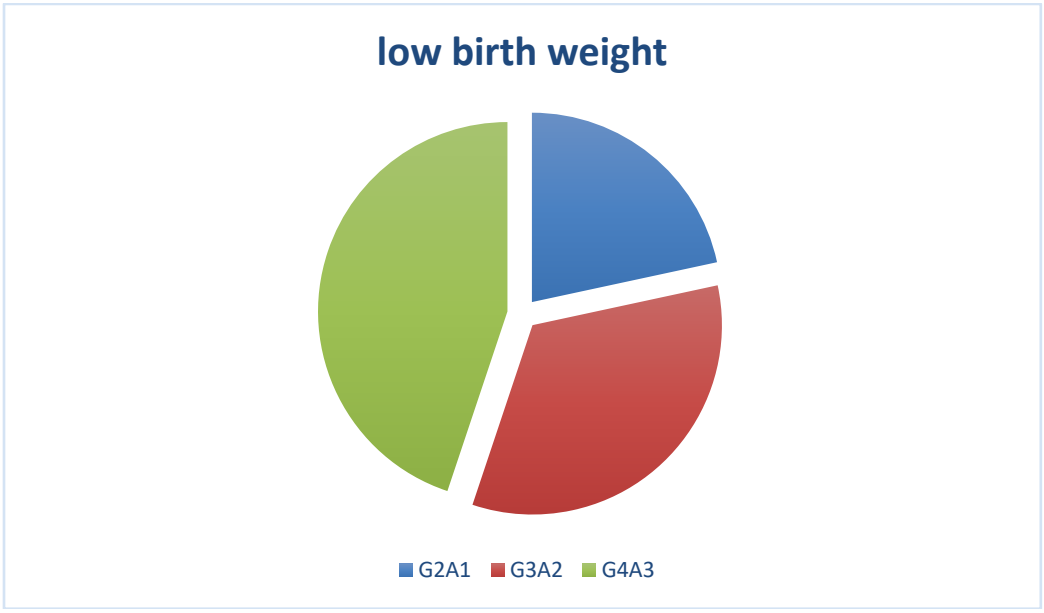


Table 9:- Incidence of low birth weight and number of previous spontaneous abortions:

Previous Abortions	Low BirthWeight
G2A1	40%
G3A2	62%
G4A3	83%



Incidence of Low birth weight increases with increase in number of previous spontaneous abortions.

Discussion:-

200 subjects were selected in the study cohort with history of previous spontaneous abortions and 200 subjects were selected in the control cohort with previous normal deliveries. The outcome has been analysed with respect to following factors:
1.Age distribution of Subjects. 2. Full term deliveries 3.Preterm deliveries.4.Abortions
5.IUGR 5.PROM 6. LBW 7.IUD

In comparison to control cohort the study data suggest that woman with previous history of spontaneous abortions are at increased risk of adverse obstetrics and perinatal outcome in current pregnancy.

Complications include Recurrent spontaneous abortion, PROM,PPROM , IUGR, Preterm delivery, Low birth Weight,IUD.

Among 200 subjects in the control group and 200 in the study group 76% belong to age group 21-30 yrs,19% belong to age group 18-20 yrs and 5% belong to 30-35 yrs in both groups. The age distribution between two groups were found similar with no statistical significance between the two groups related to maternal age.

Among 200 patients in the study cohort 68% had history of previous 1 spontaneous abortion,29% had 2 previous spontaneous abortions and 3% had history of 3 previous spontaneous abortions.

Out of 200 subjects in the control group 89% had full term deliveries and only 4% had preterm deliveries. Compared with 200 subjects in the study group 70% had full term deliveries,15% had preterm deliveries, 9% had first trimester abortions,2% second trimester abortion and 4% were IUD. Therewas statistical significance difference found in those who delivered at term p value being <0.00001. In Preterm delivery P value < 0.0001 which is of Statistical significance and in Ist trimester Spontaneous Abortions also p value is statistically significant <0.04.

Similar study conducted by Dr C.H. Rama at Govt maternity hospital, S.V. Medical college Andrapradeshhad 80% of patients in control group 94% in the study delivered at term. This shows that the success of having term delivery is less with patients with previous spontaneous abortions.

81% patients in the control group had full term normal deliveries and 40% patients in the study group had full term normal delivery p value <0.00001 being statistically significant. In a study by DR C.H. Rama the number of patients who had full term delivery was 81% which is found to be similar with our study.

8% subjects in the study group and 5% of the control group had preterm deliveries. P value being 0.02 which is statistically significant. Olga Basso et al, P.W Beard et al (20)and study by Dr CH. Rama show an increased in risk of preterm labour after previous spontaneous abortions.

The subjects in the study group who underwent C- section were 28% full term and 5% preterm compared to the control group in which 4% underwent FT LSCS and 1% PT LSCS. P values being <0.00001 for FT LSCS and <0.01 for PTLSCS the difference is statistically significant. A similar increased incidence of LSCS was found in studies conducted by Kashanian m et al at 9, and study by Dr CH. Rama.

9% of the study group had I st trimester spontaneous abortion. Compared with 4% in the control group, p value is 0.04 which is statistically significant value. Supporting results of recurrent abortions were found in a study by Dr CH. Rama and Kashanian M et al found that there was increase risk of repeat abortions 6% and 16%respectively.

Preterm Labour with IUDin study group,p value is 0.05 which is statistically significant. Second trimester abortion values did not show statistical difference.

16% patients among the study group had PROM and 34% had PPROM compared to the control group which had 3.5% PROM and 1% PPROM, p value <0.01 statistically significant. Similar results were found in a study conducted by Dr CH. Rama.

Correlation between previous abortions and IUGR, IUD ,PROM ,PPROM when studied it was found that 16% of G4A3,11% of G2A1,10% 0f G3A2 had PROM.33% of G4A3,6% of G3A2 and 3% of G2A1 had PPROM.33%

G4A3 had IUGR.6% G3A2 and 2% G2A1 had IUGR.2% G3A2 and 16% G4A3 had IUD. We conclude that with increase in number of previous abortions there is increase in the incidence above adverse outcomes. Dr C.H.Rama, David H.Thorn Bhattacharya studies show risk of IUGR and IUD in previous abortions.

In this study there were No stillbirth in both the groups.

The present study shows that the risk of Pre- eclampsia, Oligohydroamnios,Gestational diabetes,Hypothyroidism,Threatened preterm increases with increase in number of previous spontaneous abortions.Findings of our study is similar with study of Bhattacharya et al .

This study shows that with increase in number of previous spontaneous abortion the chances of LBWincreases.40% G2A1 to 83%G4A3. Similar findings were found in study conducted by Bhattacharya et al ,David H Thorn, by Dr CH. Rama

Statistically significant Increase in incidence of instrumental delivery were seen in other study by Dr CH. Rama which did not match with this study.

Taylor et al reported increase risk of incidence of placenta previa with previous abortions which is not significant in this study.

Conclusion:-

1. Unfavourable outcome in previous pregnancies increases the risk of adverse outcome in subsequent pregnancies.
2. The success of having term delivery is less with patients with previous spontaneous abortions.
4. As the number of previous spontaneous abortion increases chances PROM, PPROM,IUGR,IUD, Pre eclampsia, oligohydroamnios,hypothyroidism increases in subsequent pregnancies.
5. With increase in number of previous spontaneous abortion there is increase incidence of recurrent abortions, Preterm delivery, LSCS .
6.Previous spontaneous abortions have impact on successful outcome of future pregnancies hence careful surveillance is required pre-conceptional investigations, proper history taking,meticulous follow up during antenatal period,proper investigations should be carried out to detect recurrent fetal loss, timely ultrasound, biophysical profilewill help in early detection of any possible complication.

Therefore we conclude that our study has great contribution inrecent knowledge that every pregnancy with prior history of spontaneous abortions should be considered as high risk pregnancy and evaluation along antenatalcheckup should be done regularly and carefully.

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