

PREGNANCY OUTCOME FOLLOWING ABORTIONAnnapurna P¹, Th. Bidhumukhi Devi², Bino Kumari Devi³**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: The previous two or three induced - were spontaneous abortion will carry a risk of preterm, ectopic pregnancy. This is to study is to evaluate the outcome of pregnancy with history of previous abortion. **MATERIAL AND METHODS:** This study was conducted for one and half year period in Regional Institute of Medical Sciences, Imphal, Manipur. **RESULTS:** We observed that majority of the women in the study fell in 25 to 35 years of age. 116 (71.9%) women with history of induced abortion were aged between 25 to 30 years of age. 52(73.3%) women with history of spontaneous abortions were less than 30 years of age. There were only 7(9.7%) women in the spontaneous abortion group who were above 35 years of age. **CONCLUSION:** We concluded that women with previous history of two or three induced abortions were at risk of preterm birth, very preterm birth and low birth weight babies in the subsequent pregnancies. The risk of caesarean was found to be increased in women with previous two or three spontaneous abortions exposing the women to the morbidity associated with the C-section.

KEYWORDS: Abortion, Spontaneous, Induced, Recurring pregnancy loss, Caesarean section.

INTRODUCTION: For many parents, the birth of a first child is a life-changing and momentous occasion. For first time parents who give birth to healthy babies, the changing lifestyle and additional responsibility may be challenging and stressful enough, but for those who had spontaneous or induced abortion the challenges they face may be greater because of the additional morbidity that is associated with it. The case-control French EPIPAGE (epidemiologic des Petits Ages Gestational) study, found a 1.5 fold increased incidence of very preterm delivery (22 to 32 weeks) - in women with history of induced abortion.⁽¹⁾ A Danish study showed an increased risk of miscarriage following prior induced abortion among women who got pregnant within 3 months after the abortion. Another study showed induced abortion by vacuum aspiration is associated with an increased risk of first-trimester miscarriage in the subsequent pregnancy.⁽²⁾ The currently available literature in obstetric and neonatal outcome of pregnancies from women with a history of recurrent miscarriage shows inconsistent results, partly because of small numbers in the studies reported, and partly because of lack of an appropriately chosen control population.

In this part of the country, there are many cases of Medical Termination of Pregnancy (illegal or legal), spontaneous abortions, including recurrent miscarriage, which are either aspirated by vacuum or by Dilatation & Evacuation or Dilatation & Curettage. In particular, it is pivotal to evaluate the likelihood of subsequent adverse obstetric outcome and to be vigilant in screening and intervening, if possible, to avoid or reduce the anticipated detrimental effects. The present study was conducted to evaluate the adverse effects of abortions on subsequent pregnancy.

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MATERIALS AND METHODS: It is a hospital based cross-sectional prospective study which was conducted in the Department of Obstetrics and Gynaecology, Regional Institute of Medical Sciences, Imphal, Manipur. For a period of one and half year from October 2011 - March 2013.

206 pregnant women of age 18 to 40 years of whom 135 women had history of two or three abortions and 71 women had history of two or spontaneous abortions were enrolled in the study. They were followed up and the outcome of pregnancy like preterm birth, very preterm birth, ectopic pregnancy, abortion, intrauterine death and birth weight of the babies in those reaching full term were recorded to note the occurrence of low and very low birth weight. Age, parity, pregnancy outcome, mode of delivery, birth weight and indications for cesarean were noted. History of medical disorders – hypertension, diabetes mellitus, heart disease, renal disorders, autoimmune diseases, Multiple gestations, History of Gestational Trophoblastic Diseases. This was all exclusion criteria for the study.

PROCEDURE:

1. A written valid informed consent was taken from the subject willing to participate in the study and was screened randomly according to the inclusion and exclusion criteria.
2. Detail history of each individual case regarding age, address, religion, occupation, literacy, socio-economic status, chief complaints, history of present illness, menstrual history, obstetrical history, past history of illness- hypertension, diabetes, chronic renal diseases, heart disease etc. and family history, personal history were taken.
3. A thorough general physical and systemic examination was carried out with special reference to build, nutrition, weight, anemia, edema and vital data.
4. Routine examination of Hemoglobin g/dl, ABO grouping and Rh typing, urine for sugar, albumin, KFT and LFT was done in all the cases.

DATA COLLECTION: Data of all patients were recorded in pre-designed proforma which is enclosed in the annexure–II.

The observations of the study were recorded in the data base programme, SPSS version 16. Descriptive statistics and analysis of the study variables were done. A chi-square test was carried out wherever appropriate.

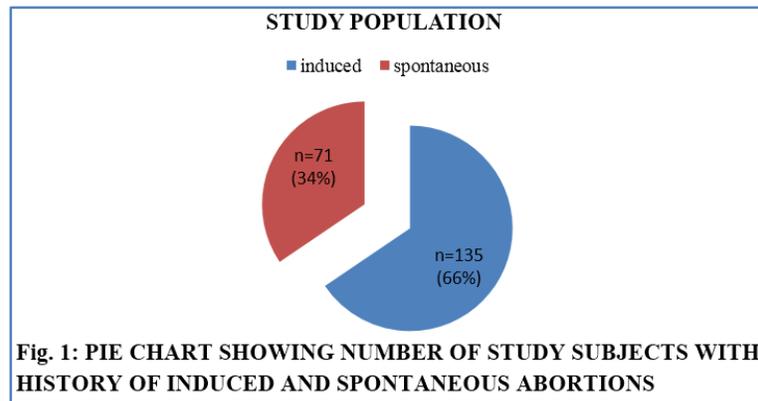
ETHICAL APPROVAL: The protocol of the thesis was submitted to the committee for ethical approval, RIMS, Imphal and approval obtained.

RESULTS AND OBSERVATIONS: Among the 206 study subjects 135 had history of two or three induced abortions and 71 had two or three spontaneous abortions.

STUDY GROUP	NUMBER(n)	PERCENTAGE (%)
INDUCED	135	65.5%
SPONTANEOUS	71	34.5%

TABLE 1: DISTRIBUTION OF STUDY SUBJECTS

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AGE(years)	TYPE OF ABORTION		TOTAL
	INDUCED	SPONTANEOUS	
<25	19(14%)	22(31%)	41
25-30	63(46.7%)	30(42.3%)	93
31-35	34(25.2%)	12(17%)	46
>35	19(14.1%)	7(9.7%)	26
TOTAL	135	71	206

TABLE 2: DISTRIBUTION OF STUDY SUBJECTS ACCORDING TO AGE

We observed that majority of the women in the study fell in 25 to 35 years of age. 116(71.9%) women with history of induced abortion were aged between 25 to 30 years of age. 52(73.3%) women with history of spontaneous abortions were less than 30 years of age. There were only 7(9.7%) women in the spontaneous abortion group who were above 35 years of age and the association between advancing age and the occurrence of abortions could not be elicited.

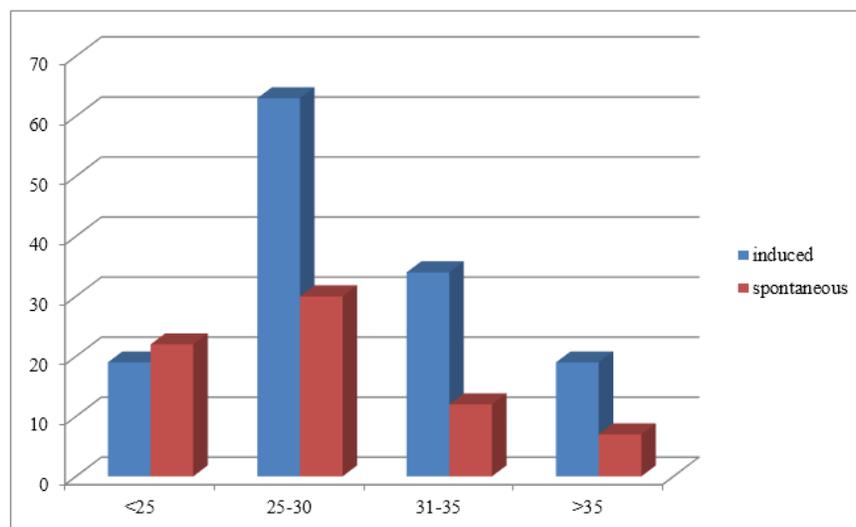


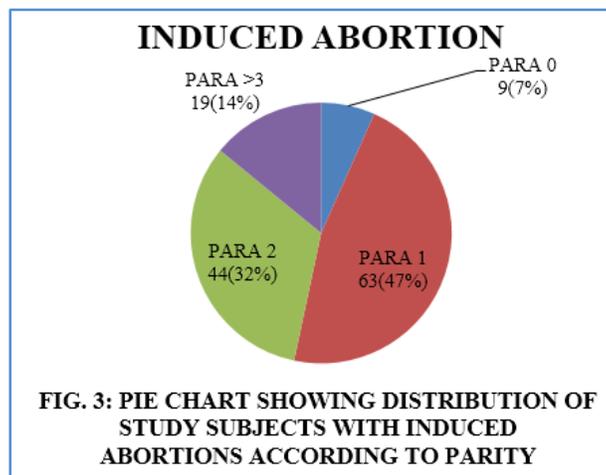
FIG. 2: BAR GRAPH SHOWING AGE WISE DISTRIBUTION OF INDUCED AND SPONTANEOUS ABORTIONS IN THE STUDY

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PARITY	TYPE OF ABORTION		TOTAL
	INDUCED	SPONTANEOUS	
0	9(6.7%)	56(78.8%)	65
1	63(46.7%)	8(11.3%)	71
2	44(32.6%)	5(7.1%)	49
>3	19(14.1%)	2(2.8%)	21
TOTAL	135	71	206

TABLE 3: PARITY WISE DISTRIBUTION OF THE STUDY SUBJECTS IN THE INDUCED AND SPONTANEOUS ABORTION GROUPS

We observed that induced abortions occurred frequently in women of one and two parity and spontaneous abortions occurred frequently in nulliparous women. 107(79.3%) women with induced abortion were of parity one or two showing women harbor to MTP as means of birth spacing by terminating the unwanted pregnancy. 56(78.8%) of women with spontaneous abortion history were nulliparous in our study.



PREGNANCY OUTCOME	TYPE OF ABORTION		TOTAL
	INDUCED	SPONTANEOUS	
FULL TERM	99(73.3%)	63(88.7%)	162
PRETERM(<37wks)	12(8.9%)	4(5.6%)	16
VERY PRETERM(<33wks)	5(3.7%)	1(1.4%)	6
ABORTION	13(9.6%)	1(1.4%)	14
ECTOPIC	5(3.7%)	1(1.4%)	6
IUD	1(0.8%)	1(1.4%)	2
TOTAL	135	71	206

TABLE 4: PREGNANCY OUTCOME IN THE INDUCED AND SPONTANEOUS ABORTION GROUPS

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We observed that in the induced abortion group, 99(73.3%) of them achieved full-term pregnancy, 12(8.9%) were preterm birth, 5(3.7%) were very preterm, 13(9.6%) aborted, 5(3.7%) were ectopic pregnancy and 1(0.8%) was IUD. In the spontaneous abortion group 63(86.8%) achieved full-term pregnancy, 4(5.6%) were preterm birth and one each (1.4%) of very preterm birth, abortion, ectopic and IUD occurred. Thus 164 (78.64%) out of 206 women in the study achieved full-term pregnancy in both the study groups.

INDUCED ABORTION	PRETERM BIRTH		Odds ratio
	PRESENT	ABSENT	
Present	12	123	1.63%
Absent	4	67	

TABLE 5: ODDS OF OCCURRENCE OF PRETERM BIRTH IN WOMEN WITH HISTORY OF TWO OR THREE INDUCED ABORTIONS

INDUCED ABORTION	VERY PRETERM		Odds ratio
	Present	Absent	
PRESENT	5	130	2.73%
ABSENT	1	70	

TABLE 6: SHOWS ODDS OF OCCURRENCE OF VERY PRETERM BIRTH IN WOMEN WITH HISTORY OF TWO OR THREE INDUCED ABORTIONS

In the induced abortion group, preterm birth occurred in 12(8.9%), very preterm birth in 5(3.7%) with found odds ratio of 1.63 and 2.73.

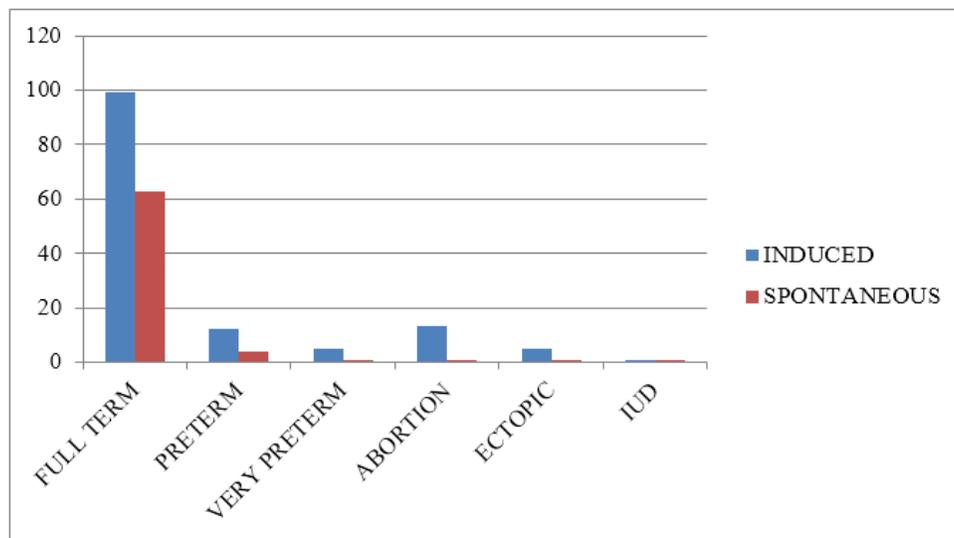
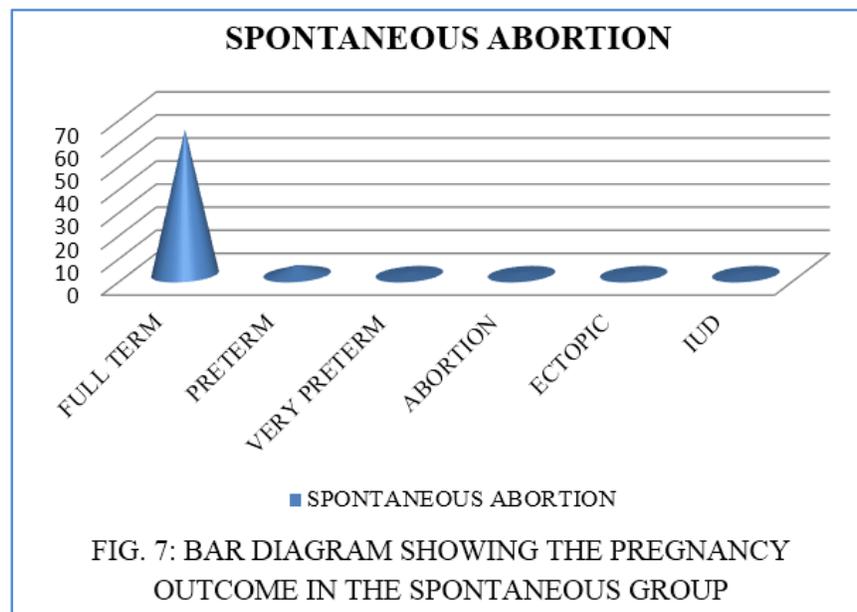
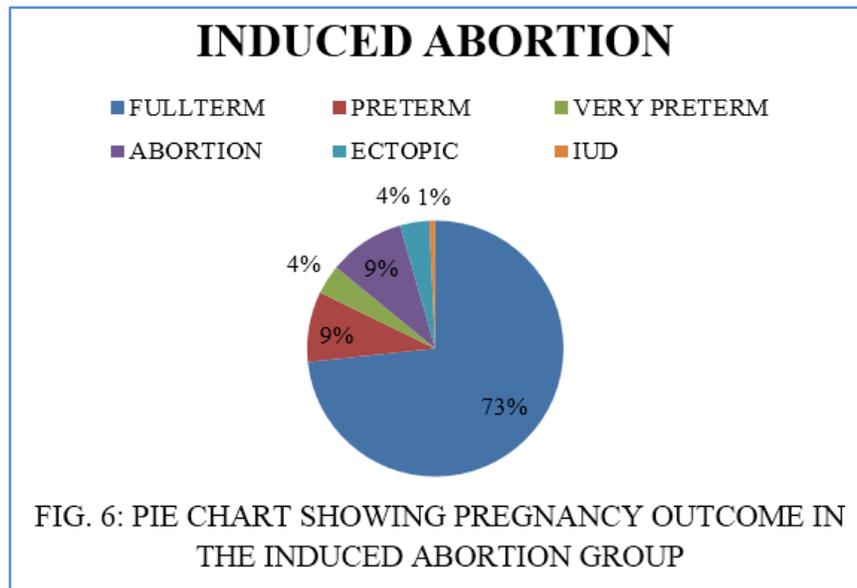


FIG. 5: BAR DIAGRAM SHOWING THE COMPARISON OF PREGNANCY OUTCOME IN THE INDUCED AND SPONTANEOUS ABORTIONS

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BIRTH WEIGHT	TYPE OF ABORTION		TOTAL
	INDUCED	SPONTANEOUS	
>4000g	6(6.1%)	1(1.6%)	7
2500-4000g	68(68.7%)	59(93.6%)	127
1500-2500g	18(18.1%)	3(4.8%)	21
<1500g	7(7.1%)	0	7
TOTAL	99	63	162

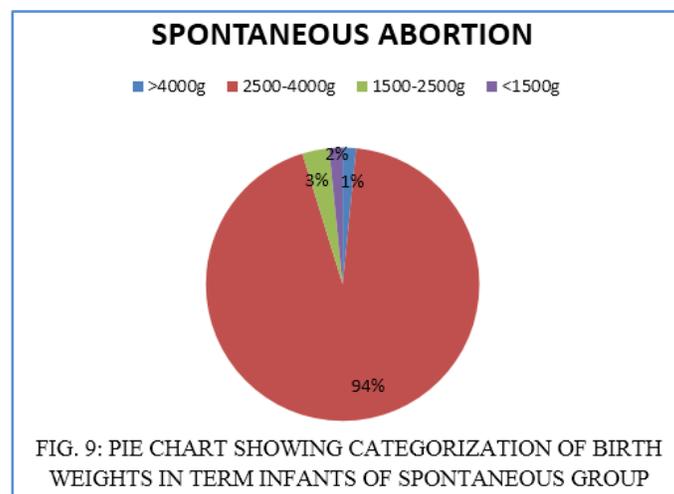
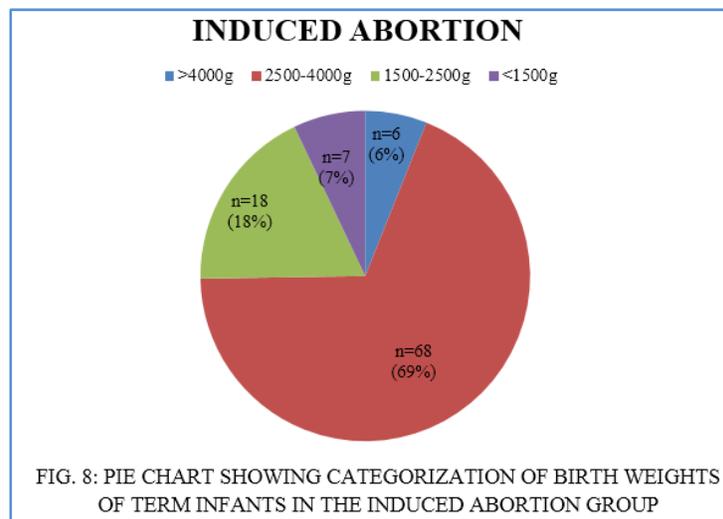
TABLE 7: BIRTH WEIGHTS OF INFANTS IN PREGNANCIES ACHIEVING FULL-TERM IN THE INDUCED AND SPONTANEOUS ABORTION GROUP

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INDUCED ABORTION	LOW BIRTH WEIGHT		Odds ratio
	Present	absent	
Present	18	117	3.48%
Absent	3	68	

TABLE 8: SHOWS ODDS OF OCCURRENCE OF LOW BIRTH WEIGHT IN WOMEN WITH HISTORY OF TWO OR THREE INDUCED ABORTIONS

Among 162 pregnancies reaching term, 68(68.7%) full term infants in the induced abortion group and 59(93.6%) full term infants in the spontaneous abortion group had normal birth weight falling between 2500-4000g. Low birth weight (1500-2500g) infants occurred in 18(18.6%) and 3(4.8%) of the induced and spontaneous abortion group respectively with the odds of occurrence of low birth weight in those with history of two or three abortions of 3.48. Very low birth weight babies were 7(7.2%) and none in the induced and spontaneous abortion group



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MODE OF DELIVERY	TYPE OF ABORTION		TOTAL
	INDUCED	SPONTANEOUS	
VAGINAL	93(80.2%)	21(30.9%)	114
CAESAREAN	23(19.2%)	47(69.1%)	70
TOTAL	116	68	184

TABLE 9: SHOWING THE MODE OF DELIVERY IN THE INDUCED AND SPONTANEOUS ABORTION GROUP

The mode of delivery was mostly vaginal in the induced abortion group in 93 women accounting to 80.2% and caesarean delivery in 23 women accounting to 19.2% of the total cases. In the spontaneous abortion group the caesarean section was mode of delivery in 47(69.1%) of the women and vaginal delivery in 21(30.9%) of them.

DISCUSSION: The study conducted in the institution where nearly thirteen thousand pregnancies are recorded per year and with two or more induced abortion rate between 1.5 -4% and recurrent spontaneous abortions of 1-3%, we found that the previous adverse event like abortion especially induced abortion had a significant effect on the pregnancy outcome in the future pregnancy.

Preterm birth defined as gestational age <37 weeks occurred in 12(8.9%) of the newborns in the study group of 135 pregnancies with history of previous two or three induced abortion. Very preterm birth defined as gestational age less than 33 completed weeks in 5 (3.7%) of the study group with history of two or three induced abortion with odds ratio of 1.63. The association between previous induced abortion and very preterm delivery was comparable with the study conducted by Moreau C et al⁽³⁾ who reported the odds of occurrence of very preterm birth of 1.5 in those with history of previous induced abortions. History of induced abortion was associated with an increased risk of premature rupture of membranes, antepartum hemorrhage and idiopathic spontaneous labour that occur at early gestational weeks.

The odds ratios of preterm singleton birth in the study (OR-1.63) in the induced abortion group was comparable with the study conducted by Zhou W et al⁽⁴⁾ who reported odds ratio of preterm singleton live births in women with two and two or more induced abortions of 2.66 and 2.03 respectively. The results were consistent with the study conducted by Brown JS et al⁽⁵⁾ reporting odds ratio for preterm birth of 2.0 and 3.0 following two and three or more induced abortions respectively.

The odds ratio for preterm birth in our study in the spontaneous abortion group was found to be 2.21 which was significant and was consistent with the meta-analysis conducted by Swingle MH et al⁽⁶⁾ who reported common adjusted OR for preterm birth after more than one spontaneous abortion was 2.27. Biologically plausible hypothesis proposed for preterm birth may also be pathophysiologic mechanisms leading to preterm delivery following pregnancy termination by either induced or spontaneous abortions. The increased risk of preterm and very preterm birth was also observed in the study conducted by Basso O et al⁽⁷⁾ reporting 8.2 % and 3% in women with previous two and two or more spontaneous abortions.

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The occurrence of preterm birth in the study was found to be consistent with the results observed in the study conducted by Henriët L and Kaminski M⁽⁸⁾ where they reported the occurrence of preterm birth in 3.7% of the study group with two or induced abortions. The occurrence of very preterm birth was 0.8% in their study which three times less when compared to our results.

The occurrence of low birth weight were high in our study when compared with the observations made by Basso O et al⁽⁷⁾ who reported the occurrence of low birth weight in 5.5% and 3.2% of women with history of two or more induced abortions and spontaneous abortions respectively. Neilsen HS et al⁽⁹⁾ reported occurrence of low birth weight in 8% of subjects with previous miscarriages which was comparable with our study results.

The occurrence of abortions was in 13(9.6%) women among the induced abortion group in the study. The occurrence of subsequent miscarriage was found to be nearly comparable to the study values conducted by Sun Y et al⁽¹⁰⁾ who found 5.5% of abortions occurring in the abortion cohort.

Among 135 women of the induced abortion group in our study, 19(14%) women were found to be of less than 25 years of age. 116(76%) women were older than 25 years which was comparable to the observation of Basso O et al⁽⁷⁾ study with the occurrence of induced abortion in 29% and 70.6% of women with age less and more than 25 years respectively. The occurrence of two or more induced abortion was high in the age group of 25-34 years amounting to 62.2% in the study conducted by Henriët L and Kaminski⁽⁸⁾ which was observed in our study with 97 (71.9%) women in the induced abortion group falling in the age group of 25-35 years. This was also consistent with study conducted by Ancel PY et al⁽¹¹⁾ reporting 83.6% of women with previous abortions falling in the 20-35 year age group. 63(46.7%) women in the induced abortion group were para one which was comparable with the results of Henriët L and Kaminski M⁽⁸⁾ study who found 32.9% of the women to be para one.

Cesarean section was conducted in 23(19.2%) and 47(69.1%) for delivering the baby in the induced abortion and spontaneous abortion group of our study respectively. The most common indication for cesarean in the spontaneous abortion group was found to be poor obstetric history. The rate of cesarean delivery was high in our study among the spontaneous abortion group when compared with the results of Neilsen HS et al⁽⁹⁾ and Jivraj S et al⁽¹²⁾ who observed 42% and 36% c-section in of women with previous spontaneous abortions respectively. This may explained by liberal cesarean intervention keeping in mind of the poor obstetric history.

CONCLUSION: Around fifty million abortions occur worldwide annually. Various studies have shown that abortions in the past have an impact on the future pregnancy. Women with previous abortion/s have an increased risk of adverse events like recurrence of pregnancy loss, ectopic pregnancy, placenta praevia, preterm labour, low birth weight baby, retained placenta etc. in the subsequent pregnancy. The risks vary with the type of abortion and even a small adverse event is a public health importance. There is a possibility of previous two or three induced abortions carried increased risk of preterm, very preterm and low birth weight babies. The risk of surgical intervention for delivering increased in the spontaneous abortion group. Thus the study showed that previous history of abortions had an adverse effect on the subsequent pregnancy especially

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with induced abortions. This can be tackled with proper contraceptive use of which the women are not properly aware of. Thorough examination to evaluate the cause of spontaneous abortions may help treat better and reduce the adverse impact on the subsequent pregnancy.

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