INDUCED ABORTION AND SUBSEQUENT PREGNANCY OUTCOME

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INTRODUCTION

Recently, the rate of reported induced abortions to live births has increased tremendously. The majority of women opting for an abortion for unplanned pregnancy are young and of low parity. Therefore, harmful effects of induced abortion on future reproductive performance are of great concern. A greater incidence of both early and late pregnancy complications as well as poorer perinatal outcome have been reported in many studies (Schoenbaum et al, 1980; Levin et al, 1980; Kalandidi, et al 1991; Hogue, 1986). while others have shown no such association. (Madore et al, 1981; Mandelson et al, 1992). This study was carried out to evaluate the pregnancy and perinatal outcome in a pregnancy following one or more induced abortions.

METHODOLOGY

The study was conducted in the Department of Obstetrics and Gynaecology, Postgraduate Institute of Medical Education and Research, Chandigarh. A total of 300 subjects with a previous history of induced abortion immediately prior to the present pregnancy were recruited. For each subject of the study group, a control matched in age, parity and period of gestation was also enrolled, thus recruiting a total of 600 subjects. Women sure of their last menstrual cycle, with a gestation period of less than 12 weeks at registration and with a history of induced abortion immediately prior to the present pregnancy, were included. Women in the control group had no history of induced abortion.

Exclusion criteria (study and control group)

1. Prior spontaneous abortion.
2. Incompetent cervix, uterine malformation or uterine fibroid.
3. Chronic hypertension, diabetes mellitus or renal disease.
4. Multiple pregnancy.

The period of gestation at the time of induced abortion, method by which it was done, interval between the present pregnancy and induced abortion were recorded. Detailed information pertaining to the events during antenatal period,

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TABLE 1
Complications of Early Pregnancy

Type of complication	Study group (n = 300) %	Control group (n = 300) %
Ectopic pregnancy	1.7	0.3
1st trimester bleeding	8.7*	1.3
Spontaneous abortion	8.7*	1.6
Missed abortion	2.3	0.3
Total	21.3	3.7

*p <0.001

TABLE 2
Complications of Late Pregnancy

Type of Complication	Study group (n = 300) %	Control group (n = 300) %
PIH	7.7*	2.0
Placenta previa	8.3**	3.7
Preterm labour	15.7**	6.7
IUGR	11.3**	2.7
Total	43.0	15.0

*p<0.05, **p<0.01

labour and outcome of current pregnancy were also recorded. Mother and baby were followed up till the time of discharge. Chi-square test was used for statistical analysis.

Results

Final analysis was done on 600 women; 300 women had undergone induced abortion in the preceding pregnancy (study group) and the other 300 matched for age and parity with no history of induced abortion (control group). The interval between the present pregnancy and previous abortion ranged between 3 months and 6 years. A significantly higher number of study group women had early pregnancy complications– 21.3 per cent compared to only 3.7 per cent among the controls (Table 1). Twenty-five women of the study group (8.3 per cent) had placenta previa compared to 3.7 per cent of the control group. Pre-term labour and delivery occurred in significantly higher number of women in the study group. Foetal growth was affected in women who had an abortion, 11.3 per cent of them had intrauterine growth retardation (IUGR) compared to only 2.7 per cent in the control group (Table 2).

Of the 300 women in the study group, twenty-six had undergone two induced abortions previously, while nine women had undergone three induced abortions. Women who had had two or more abortions induced with significant difference in rate of IUGR, (25 per cent compared to 7.8 per cent) had more complications than those who had had only one abortion. Among the nine patients who had undergone three abortions, placenta was adherent in three of them and one patient needed peripartum hysterectomy for the same. Period of gestation at which previous abortion was carried out also had an impact on the current pregnancy outcome. Antenatal complications were significantly more in women who had undergone an abortion at 9-12 weeks gestation compared to when it was carried out at eight weeks. Thirty seven women who had got their previous pregnancy terminated in midtrimester had a significantly higher rate of abortion, preterm labour and placenta previa compared to those who had undergone an abortion in the first trimester as shown in Table 3.

Table 4 shows the antenatal complications in relation to the method of

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TABLE 3
Complications in Relation to Period of Gestation of Previous Induced Abortion

Complication	POG of previous induced abortion Upto 8 wks (n = 214) %	9-11 wks (n = 49) %	12-16 wks (n = 37) %
Ectopic pregnancy	1.4	4	-
1st trimester bleeding	8.8	12.2	2.7
Spontaneous and missed abortion	6	28.6	16.3*
Preterm labor	8.8	37.7**	29.7**
Placenta previa	3.7	20.4**	18.9**
IUGR	6.5	38.8**	2.7

*p <0.05 **p <0.001

induced abortion. Overall the complication rate was higher in women who had the abortion done by dilatation and curettage (D&C) compared to those who had it done by the suction evacuation method. Five women in the study group had ectopic pregnancy and in four of these, previous pregnancy was terminated by D&C.

outcome was significantly better in women who did not have an abortion compared to the ones who had had an induced abortion (Table 5). There was a significantly higher incidence of low birth weight babies in the study group (13.3 per cent) compared to 4.3 per cent in the control group.

TABLE 4
Complications in Relation to Method of Induced Abortion

Complication	S/E (n = 96) %	D & C (n = 167) %	Midtrimester abortion (n = 37) %
Ectopic pregnancy	1.05	2.4	-
1st trimester bleeding	6.3	11.4	5.4
Spontaneous / missed abortion	8.3	11.4	16.2
Placenta previa	5.2	13.8*	19.0*
IUGR	12.5	12.6	2.7
Total	33.3	51.5	43.2

S/E - Suction/Evacuation, D & C - Dilatation and Curettage *p <0.05

Preterm labour or delivery was significantly higher (15.7 per cent) in the study group compared to the control group 6.7 per cent. Overall pregnancy

Discussion

Induced abortion is increasingly being used to avoid unwanted pregnancies. The risks associated with induced abortion

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TABLE 5
Pregnancy outcome

Outcome	Study group (n - 300) No.	%	Control group (n - 300) No.	%
Ectopic pregnancy	5	1.7	1	0.3
Spontaneous/missed abortion	33**	11.0	6	2.0
Preterm delivery	47**	15.7	20	6.7
Placenta previa	25**	8.3	11	3.7
Caesarean section	58	19.3	47	15.7
Live born	258**	86.0	287	95.7
Low birth weight	40**	13.3	13	4.3
Congenital malformation	5	1.7	2	0.6
Neonatal deaths	7	2.3	2	0.6

*$p < 0.05$, **$p < 0.001$

and its influence on subsequent pregnancies need to be studied. The vast majority of the women in the study (90 per cent) were between 21-30 years and all were married in contrast to the situation in the West, where a significant number of pregnancy terminations are performed on unmarried teenagers and in women less than 20 years of age.

Other authors (Kalandidi et al, (1991), Holt et al, (1989) and Markinen et al, (1987) have found an increase in the chances of a subsequent ectopic pregnancy due to pelvic inflammatory disease following an induced abortion. Cervical lacerations during the abortion procedure may cause cervical incompetence leading to higher mid-trimester abortions and pre-term deliveries in a future pregnancy. In the study, a significantly greater incidence of spontaneous abortions as well as pre-term deliveries were noted. Data summary of 200 publications by Hogue (1986) has drawn a similar conclusion. Madore et al (1981), however, have found no such association in their study. The period of gestation at which the pregnancy is terminated does have an impact on the subsequent pregnancy outcome (Mandelson et al 1992, Meirik and Nygrin, 1984). with an increased risk of spontaneous abortion with a previous mid-trimester induced abortion.

Placenta previa occurred in eight per cent of women who had had an induced abortion earlier compared to 1.3 per cent among controls. Endometrial curettage during induced abortion may cause significant scarring of the endometrium which predisposes to abnormal placental implantation like adherent placenta and placenta previa in a subsequent pregnancy. Barrett et al (1981) have also shown increased risk of placenta previa with a previous induced abortion. If the abortion is induced by sharp curettage, subsequent low placentation is more compared to an abortion where suction evacuation method is used.

A significantly higher risk of intrauterine growth retardation was noted in the study group. There were more casarean sections in the study group due to a higher incidence of placenta previa and other complications necessitating operative delivery. Obel

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(1979), has found a higher rate of retained placenta in women with a previous induced abortion. In the present study, a significantly high rate of adherent retained placenta was found among women who had had three or more induced abortions.

Linn et al (1983) have shown a higher incidence of foetal congenital malformations in women with previous induced abortions, not observed in the present study. A significantly higher rate of low birth weight infants has been observed in the present study. Harlap et al (1979) have also shown a two-fold increased risk of low birth weight babies born to women, as a sequel to induced abortion. Number of prior induced abortions two or more; abortion done by dilatation and curettage and those done at more than 8 weeks' gestation correlated with the low birth weight in the present study. Similar observations have been made by other authors. (Hogue, 1986, Mandelson et al 1992, Meirik and Nygria, 1984 and Linn et al, 1983).

Conclusion

The present study clearly demonstrates the adverse effects of induced abortions on subsequent pregnancy with increased incidence of abortion, placenta previa, IUGR, pre-term deliveries and low birth weight babies. Two or more induced abortions, induced at more than eight weeks' gestation carried out by dilatation and curettage, have more complications. Suction evacuation prior to or at eight weeks by an expert personnel should be the choice. It is very important to counsel the women who seek abortion that this procedure is not to be used as an alternative to contraception.

References

Barrett, JM, Boehm, FH and Killam, AP. 1981 : Induced abortion: A risk factor for placenta previa. American Journal of Obstetrics and Gynaecology, 141: 769-772.

Grimes, DA and Techman, T. 1984 : Legal abortion and placenta praevia. American International Obstetrics. and Gynaecology, 149: 501-504.

Harlap, S, Shino, PH, Ramcharan, S., Berendes, H. and Pallegrin, F. 1979 : Prospective study to spontaneous fetal losses after induced abortions, The New England Journal of Medicine, 301:677-681.

Hogue, CJR 1986 : Impact of abortion on subsequent fecundity. Clinical Obstetric and Gynaecology, 13: 95

Holt, V., Daling, J., Voigt, L. Mcknight, B, Stergachis, A. Chu, J. and Weiss, N. 1989 : Induced abortion and risk of subsequent ectopic pregnancy. American Journal of Public Health, 79, 1234-1238.

Kalandidi, A, Doulgerakis, M, Tzonou, A, Hsieh, CC, Arvandinos, D and Trichopoulos, D 1991 : Induced abortion, contraceptive practices and tobacco smoking, as risk factors for ectopic pregnancy. British Journal of Obstetrics and Gynaecology, 98: 207-213.

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Levin, AA,. Sihoenballon, SC, Manson, RR, Stubblefield, PG and Ryan, KJ. 1980 : Association of induced abortion with subsequent pregnancy loss. JAMA, 243: 2495-2499.

Linn, S., Schoenbaum, SC, Manson, RR, Rosner, B. Stubblefield PG and Ryan KJ 1983 : The relationship between induced abortion and outcome of subsequent pregnancies. American Journal of Obstetrics and Gynaecology, 146:136-146.

Madore, C, Hawes, W.E, Marry, F and Hexter, AC. 1981 : A study on the effects of induced abortion on subsequent pregnancy outcome, American Journal of Obstetrics and Gynaecology, 139: 516-521.

Mandelson, MT. Madeu, CB, and Daling JR. 1992 : Low birth weight in relation to multiple induced abortion, American Journal of Public Health, 82:391-394

Markinen, JI, Erkkola, RU, and Laippala, PJ. 1987 : Causes in increase in incidence of ectopic pregnancy. A study on 1107 patients from 1961 to 1985 in Turku, Finland. American Journal of Obstetrics and Gynaecology, 160, 642-646

Meirik, O., and Nygrin, KG. 1984 : Outcome of first delivery after second trimester two step Induced abortion– A controlled historical cohort study, Acta Obstetrics and Gynaecology Scand, 63:45-50.

Obel, FB. 1979 : Pregnancy complications following legally induced abortion, Acta Obstetrics and Gynaecology Scand, 58:485-490.

Rose, GL, and Chapman, MG 1986 : Aetiological factors in placenta praevia – A case controlled study, British Journal of Obstetrics and Gynaecology, 93:586-588.

Schoenbaum, SC, Manson, RR, Stubblefield, PG, Darney, PD and Rayan KJ. 1980 : Outcome of delivery following an induced or spontaneous abortion, American Journal of Obstetrics and Gynecology, 136: 19-24.

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