TRANSPLACENTAL HAEMORRHAGE IN INDUCTION OF ABORTION AND EFFECT AFTER CHECK CURETTAGE

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SUMMARY

The incidence of transplacental haemorrhage (TPH) in induction of abortion during first and second trimester of pregnancy has been studied with acid elution technique. Blook samples were drawn before and after the termination procedure. TPH was present in 3.33% cases before and in 26.66% cases after termination of pregnancy of first trimester. Incidence of TPH in second trimester of pregnancy was 20% before and 40% after termination. No major TPH was seen before termination in both trimesters while it was present in 3.33% cases of first trimester and in 10% cases of second trimester after termination of pregnancy.

With check curettage incidence of TPH increased in termination of pregnancy of both trimesters. No foetal cell leak was seen before and after termination where pregnancy was less than 6 weeks gestation.

INTRODUCTION

When Rhesus positive foetal erythrocytes bearing Rh D antigen enter Rh negative maternal blood, it induces an immunological response recognised as Rhesus isoimmunisation. The positive role of transplacental haemorrhage (TPH) in Rh isoimmunisation was suspected for the first time by Leavine et al (1941). Acid elution technique for detection of foetal cells into maternal circulation for the first time was described by Kleihauer (1957). The present study was undertaken to find out the incidence of TPH in cases of termination of pregnancy of first and second trimester and also to know the effect of check curettage.

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Accepted for Publication on Nov' 96

In Rh negative patients the administration of anti-D immuno-glubulin should be done after termination of pregnancy.

MATERIAL AND METHODS

The study was conducted on 150 cases, out of which 100 cases were of study group and 50 cases of control group. The cases were selected randomly from the patients attending termination of pregnancy clinic and from out patient department of the Nehru Hospital, B.R.D. Medical College, Gorakhpur.

A complete history including age, parity, menstrual history and obstetrical history was taken from each case and each case was subjected to general and obstetrical examination. Blood grouping and cross matching was done in each group.

The study cases were broadly divided into two groups. Group A consisted of 90 cases of first trimester termination of pregnancy and group B consisted of 10 cases of second trimester termination of pregnancy. In 60 cases of group A termination was carried out by suction evacuation along with check curettage while in 30 cases only suction evacuation was done. In group B cases termination was carried out either by intracervical prostaglandin E_2 gel instillation or by extraamniotic ethacredin lactate instillation. Check curettage was done only in those cases who had bleeding after abortion which included 4 cases.

Two ml of maternal venous blood was drawn before and 2 hours after termination of pregnancy and mixed with anticoagulant. Then smears of blood were drawn on glass slide and immediately after air drying slides were fixed in 80% ethanol. Then slides were stained by acid elution technique.

Foetal cells appeared as pink stained cells against ghost like adult cells because foetal haemoglobulin is resistant to acid elution solution. Blood smear made from cord blood acted as control positive slides whereas blood smears made from blood of non-pregnant acted control negative slides.

Foetal cells were counted per 50 low power field (LPF). Five or more foetal cells per 50 LPF represented major TPH while less than 5 foetal cells per 50 LPF accounted for minor TPH.

RESULTS

Transplacental haemorrhage (TPH) was present in 3.33% cases and in 26.66% cases before and after termination of pregnancy of first trimester respectively (Table I). No major TPH was seen before termination while it was present in 3.33% cases after termination of first trimester of pregnancy (Table II).

TPH increased with check curettage in first trimester termination of pregnancy (Table III). It was in 16.66% cases where termination was carried out by suction evacuation only and in 31.66% cases where check curettage was done along with suction evacuation.

In second trimester termination of pregnancy TPH was present in 20% cases before termination and in 40% cases after termination (Table I). Here also no major TPH was seen before termination of pregnancy but was present in 10% cases

Table I
INCIDENCE OF TPH IN FIRST AND SECOND TRIMESTER TERMINATION OF PREGNANCY

Termination of pregnancy	Total no. of cases	Before MTP No.	Before MTP %	After MTP No.	After MTP %
1st trimester	90	3	3.33	24	26.66
2nd trimester	10	2	20.00	04	40.00

Table II
FOETAL CELL SCORE PER 50 LOW POWER FIELD OF MICROSCOPE IN FIRST TRIMESTER TERMINATION OF PREGNANCY

Foetal cell score	Before MTP No.	Before MTP %	After MTP No.	After MTP %
0	87	96.66	66	73.33
1 - 2	01	01.11	15	16.60
3 - 4	02	02.22	06	06.66
5 - 8	00	-	03	03.33

Table III
FREQUENCY OF TPH WITH AND WITHOUT CHECK CURETTAGE IN FIRST AND SECOND TRIMESTER TERMINATION OF PREGNANCY

Trimester	Without check curettage			With check curettage		
	Total No. of cases	No. of foetal cell +ve cases	%	Total No. of cases	No. of foetal cell +ve cases	%
First	30	05	16.60	60	19	31.66
Second	06	02	33.33	04	02	50.00

Table IV
FREQUENCY OF TPH ACCORDING TO GESTATIONAL AGE IN FIRST AND SECOND TRIMESTER TERMINATION OF PREGNANCY

Gestational age in weeks of	Total No. cases	Foetal cell +ve cases	
		No.	%
< 6	10	00	-
6 - 8	34	08	2
3.52			
8 - 10	32	10	31.25
10 - 12	14	06	42.85
12 - 14	03	00	-
14 - 16	04	02	50.00
16 - 18	01	01	100.00
18 - 20	02	01	50.00

after termination. Increase in incidence of TPH was found with check curettage in second trimester termination of pregnancy also. Foetal cell leak was present in 33.33% cases where no check curettage was done while it was in 50% cases where check curettage was done. On statistical comparison no significant difference was found which may be due to small number of cases in this group.

TPH was found to be increased with increasing gestational age in first trimester termination of pregnancy but no such relationship was found in second trimester termination of pregnancy. In our study no foetal cell leak was seen in pregnancy with gestational age of less than 6 weeks duration.

DISCUSSION

In the present study incidence of TPH in first trimester of pregnancy before termination was 3.33%. This incidence is consistence with the observation of Parmley et al (1970), Jaghav et al (1979), Bhuyan et al (1986) and Sahana et al (1993) but higher incidence before termination was reported by Murray et al (1970) and Mukherjee et al (1973), while Bakshi et al (1976) and Gupta et al (1984) found no foeto-maternal leak in first trimester of pregnancy.

In present study after termination of first trimester of pregnancy TPH was 26.66%, Mathews et al (1969), Kulkarni et al (1983), Gupta et al (1984) and Sahana et al (1993) found similar results but lower incidence was reported by Viogt et al (1969) and

Jaghav et al (1979). Lower incidence may be because of different method of staining and counting of cells. Higher incidence was reported by Bakshi et al (1978).

The incidence of TPH before termination of second trimester of pregnancy was 20% similar to incidence of Ghosh et al (1976) and Sahana et al (1993). But lower incidence was observed by Jaghav et al (1979).

In our study TPH after termination of second trimester pregnancy was 60%. Voigt et al (1969), Kulkarni et al (1983), Nanda et al (1986) also observed similar result.

Table II shows no major TPH before termination of pregnancy in both trimester. Major leak was present in 3.33% cases of first trimester and in 10% cases of second trimester after termination. Voigt et al (1969) reported major TPH in 6.6% cases in induced abortion. Sahana et al (1993) also observed 3.5% major TPH in first trimester and in 20% cases in second trimester termination of pregnancy.

Incidence of TPH increased when termination was carried along with check curettage in both trimesters of pregnancy (Table III). Kulkarni et al (1983), Bhuyan et al (1986) also observed increase in TPH with check curettage.

Thus it is concluded that frequency of TPH increases after termination of pregnancy both in first and second trimester. Check curettage increases the incidence of TPH, so it should be avoided as far as possible. There is no need to give prophylactic anti-D if termination is carried out before 6 weeks pregnancy. As incidence of TPH increases with increasing gestational age, termination should be carried out as early as possible.

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