SECOND TRIMESTER TERMINATION OUTCOME IN RELATION TO INTRAAMNIOTIC PRESSURE

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SUMMARY

A study of 50 women admitted for second trimester termination of pregnancy was done in the Department of Obstetrics & Gynaecology, MGIMS, Sevagram. This is to find out whether there is a relationship between basal intra-amniotic pressure (IAP) to Injection & Abortion Interval (IAI). Basal IAP was measured by a manometer and 150 ccs of ethacradine lactate was instilled intraamniotically. It was found that IAI decreased with increase in IAP and vice versa & also with increasing gestation. Average IAI by this method was 32 hrs. with mean pressure of 13 mm Hg. With a pressure of 9 mm Hg mean IAI was 50 hrs and with 18 mm of Hg it was 15 hrs.

Intra amniotic pressure of the pregnant uterus interests us in view of the relationship between its magnitude and the onset and clinical progress of parturition. The correlation between intraamniotic pressure and the progress of delivery is neither well defined nor always satisfactory (Csapo et al 1963). Similarly there is hardly any information available on the relationship of basal intra amniotic pressure and second trimester termination of pregnancy by medication. In the present situation despite its excellent record of safety ethacridine lactate is not becoming very popular, most probably related to the fact that it has a prolonged injection abortion interval (mean IAI 36 hrs) and success rate of only 80% in some series (Anjaneyulu 1977 and Rajan 1978). These disadvantages have lead obstetricians to search for modifications/adjuvants etc (Chhabra et al 1991, Bhosale et al 1987, Krishna et al 1982). However there are many who abort and not even with a prolonged IAI. There may be some factors which effect unfavourable/favourable outcome in others like intraamniotic pressure at the time of injection.

We endevoured to study intraamniotic pressure in women undergoing second trimester termination and find out its relation-

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ship with termination outcome.

MATERIAL AND METHODS

Present study was done in the department of Obstetrics and Gynaecology of Mahatma Gandhi Institute of Medical Sciences, Sevagram. 50 cases of second trimester termination were studied. In all these cases ethacredine lactate was used intraamniotically for termination of pregnancy. Mercury manometer was used to measure intraamniotic pressure. Level of mercury in the manometer was first equalised by using normal saline solution. After cleaning and draping the abdomen number 17 lumber puncture needle was inserted into the amniotic cavity abdominally. Immediately after that the intraamniotic pressure was measured on the manometer intraamniotically by noting the rise of mercury level. After that ethacridine lactate 150 cc was injected. Speculum examination was done and intracervical hyalase 3000 IU dissolved in 5 ccs of distilled water was injected with all aseptic precautions. Patients were observed for pain, bleeding and abortion. Finally injection abortion interval was recorded and any other intraabortal or postabortal complication was recorded.

OBSERVATIONS

All the women were between 12 to 35 yrs. of age and all parities pregnancy was between 14 to 20 weeks size of pregnant uterus. Intramniotic pressure was 9 mm Hg. minimum and 18 mm Hg maximum with mean 13 mm Hg. Further an attempt was made to find out the relationship between intra amniotic pressure and injection abortion interval. It was seen that mean IAI was 32.5 hrs. with mean pressure of 13 mm of Hg. Interval kept on increasing as the pressure kept on decreasing. Further when attempt was made to findout the relationship of gestation it was found that women with less gestation & lower pressure had more injection abortion interval (Table I, II, III & IV).

DISCUSSION

Increase in amniotic fluid leads to increased contractility in pregnancy. In few animal species it has been found that destension of the genital tract reflexly increases the

Table I

Age, Gestation and Injection Abortion Interval

Age in years	Gestation in weeks						Total
	14 - 16			17 - 20			
	Injection abortion interval in hrs						
	12 - 24	25 - 48	≥ 49	12 - 24	25 - 48	≥ 49	
≤ 25	1 (3.33)	11 (36.67)	3 (1.0)	10 (33.34)	4 (13.33)	1 (13.33)	30
26 - 30	1 (16.47)	5 (33.33)	1 (6.67)	6 (40)	2 (13.33)	— —	15
31 - 35	—	1 (20)	1 (20)	3 (60)	—	—	5

Table II

Gravidity, Gestation and Injection Abortion Interval

Gravidity	Gestation in weeks						Total
	14 - 16			17 - 20			
	Injection abortion interval in hrs						
	12 - 24	25 - 48	≥ 49	12 - 24	25 - 48	≥ 49	
G1	1 (6.25)	10 (62.5)	2 (12.5)	3 (18.75)	— —	— —	16
G2 - G3	1 (3.84)	5 (19.23)	2 (7.69)	13 (50)	4 (15.40)	1 (3.84)	26
G4 - G5	— —	2 (25)	1 (12.5)	3 (37.5)	2 (25)	—	8

Table III

Intraamniotic pressure and Injection Abortion Interval

Intra uterine pressure (IUP) mm Hg.	Injection Abortion Interval			Total
	12 - 24	25 - 48	> 49	
9 - 12	4 (15 - 38)	17 (65.39)	5 (19.23)	26
13 - 15	10 (62.5)	5 (31.25)	1 (6.25)	16
16 - 18	7 (87.5)	1 (12.5)	—	8

secretion of oxytocin by the neurohypophysis. Increased amniotic fluid as in polyhydramnios, leads to premature distension of uterine walls leading to increase in oxytocin and uterine contractility (Caldeyro Barcia et al 1957). This factor may be utilised for improving the efficacy of ethacridine to cut down on failures and reduction in injection abortion interval.

We found in our study that when the basal intrammiotic pressure was towards higher side the injection abortion interval was less 15.38% women aborted within 24 hrs. i When pressure was 9 to 12 mm of but 87.5% women aborted with intrammiotic pressure of 16 to 18. This was highly signifi-

Table IV

Gestation, Intra Amniotic Pressure and Injection Abortion Interval

Intra amniotic Pressure in mm of Hg.	Gestation in weeks						Total
	14 - 16			17 - 20			
	Injection abortion interval						
	12 - 24	25 - 48	≥ 49	12 - 24	25 - 48	≥ 49	
9	—	4 (36.37)	2 (18.18)	1 (9.09)	3 (27.27)	1 (9.09)	11
10 - 12	1 (6.61)	8 (53.34)	2 (13.33)	2 (13.33)	2 (13.33)	—	15
13 - 15	4	4 (25)	1 (6.26)	10 (62.5)	1 (6.25)		16
16 - 28	1 (12.5)	1 (12.5)	— —	6 (75)	— —		8

cant difference with p value < 0.001. Even when the gestation was considered the difference continued.

It is to be realised that the results presented here need to be further studied and ways to be searched to utilise them for having best results in second trimester termination. A most extensive comparison between theoretical predictions and experimental observations would tell us the value of the present study and the directions in which our approximations need to improved. Intra amniotic instillation can suppress the placental endocrine function to such an extent that can lead to progesterone withdrawal. In the study conducted with intra amniotic instillation of saline 33% withdrawal of progesterone was demonstrated at 10 hrs. 38% at the onset of abortion and 56% withdrawal during abortion (with placenta in utero) (Csapo, 1970). During normal mid trimester pregnancy the compensatory reserve of the placenta is such that volume increase alone (as with intra amniotic instillation) does not induce the evolution of uterine activity and abortion. (Caspo 1970). When placental progesterone support is clamped (occassionally because of endogenous regulatory failure or fetal deaths in utero), the volume increase alone induces evolution of IUP and abortion. Thus pregnancy can be terminated by imbalance between uterine volume and progesterone (by its increase).

CONCLUSION

It appears that there is a relationship between basal intramniotic pressure and Injection-Abortion interval in the second trimester termination. Thus IAP may be taken as a good predictor of IAI. As this is a pilot study hence further studies are needed to know more about the same and modify our techniques to have the best of results.

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