COMPARATIVE STUDY OF MIDTRIMESTER ABORTIONS BY SERIAL INTRAMUSCULAR INJECTIONS OF 15 METHYL PROSTAGLANDIN F_2 ALPHA AND BY MECHANICAL STIMULATION OF THE UTERUS

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Abortion as a method of limiting births has been practiced by human race since thousands of years. Human society has never reached and probably will never reach a state in which every child conceived will be a wanted one. Consequently, need for abortion continues. For interruption of pregnancy before the viability of foetus, technique should be simple, safe, effective and with negligible morbidity and mortality. Present study aimed at evaluating merits and demerits of 3 methods for termination of second trimester pregnancy.

Material and Methods

The present study was carried out in 200 patients who were selected for medical termination of pregnancy from gynaecological out patient department and Family Planning Unit. They were divided at random in 3 groups.

One hundred patients in group I were treated with serial intramuscular injections of 15 methyl PGF_2 alpha. Half an hour before the first dose of 15 methyl PGF_2 alpha, 2 tablets of lomotil were given as prophylaxis against diarrhoea which is a frequent side effect with the use of 15 methyl PGF_2 alpha. An initial dose of 250 micrograms i.e. 1 ml. was administered deep intramuscularly. Subsequent doses of 250 micrograms were administered at 2-3 hours interval depending upon uterine response. If required the dose was escalated at an increment of 0.2 ml. in a step ladder pattern. The dose was administered upto 48 hours or till the foetus was expelled, whichever was earlier. Antiemetic and antidiarrhoeals were administered as and when necessary.

In group II comprising of 50 patients, taking all aseptic precautions an autoclaved rubber catheter No. 12 was inserted in extraamniotic space. No sedation or anaesthesia was required for this procedure. Every precaution was taken during the procedure as not to rupture the membranes. If blood tricked through the catheter, it was withdrawn approximately upto internal os and reintroduced in a different direction. If the membranes ruptured during the procedure, case was taken as a technical failure and was excluded from the study. Simultaneous oxytocin drip was not started in these cases. Catheter was removed after 48 hours and case was labelled as failure. Oxytocin drip was started if patient had not aborted within 48 hours.

In group III of 50 patients, catheter was inserted as in group II. Immediately after-

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wards oxytocin drip was started with 5 I.U. added in 540 ml. bottle of 5% dextorse. Drip was started at the rate of 20-30 drops/minute. 5 I.U. of oxytocin were added after every 100 cc. upto maximum of 60 I.U. of oxytocin. After this if needed 60 I.U. of oxytocin were given per bottle, catheter was removed after 48 hours. If the patient did not abort within 48 hours. It was taken as a failure and was terminated by other means.

In all the three groups, post abortal period was carefully observed for any complication.

Results

Results were analysed according to age, parity, marital status and socio-economic status. In all the 3 groups, maximum number of abortion seekers were encountered between age group of 25-29 years. Youngest patient was of 15 years and age of oldest patient was 42 years.

In all the groups, maximum number of abortion seekers had 2 children followed by those having 3 children. Grandmultiparae constituted 17% of total patients.

In 4 patients of group I, in 4 patients of group 2 and in 5 patients of group 3, pregnancy was out of wedlock, while in rest pregnancy was unwanted in married women.

Effect of gestational period on induction-abortion interval was also analysed. The results are as in Table I. Success rate is shown in Table II. Table III shows nature of abortion (complete, incomplete) while Table IV presents the side effects.

TABLE I
Induction Abortion Interval

Sr. No.	Induction Abortion Intervals in Hours	Group I	Group II	Group III
1	Within 24 hours	90 (90%)	10 (20%)	30 (60%)
2	24-36 hours	6 (6%)	8 (16%)	4 (8%)
3	36-48 hours	4 (4%)	18	6 (12%)
4	48-60 hours	—	10 (20%)	8 (16%)
5	60-72 hours	—	2 (4%)	2 (4%)
6	More than 72 hours	—	2 (4%)	—
	Total	100 (100%)	50 (100%)	50 (100%)
	Mean Induction Abortion interval	14.01 hrs.	40.13 hrs.	28.07 hrs.
	Range R	4-44.20	20-82.10	8.36-69 hrs.

TABLE II
Success and Failure Rates in the Three Groups

Sr. No.	Groups	Total cases	Successful	Failure
1.	I	100	100 (100%)	—
2.	II	50	36 (72%)	14 (28%)
3.	III	50	48 (96%)	2 (4%)

TABLE III
Nature of Abortion

Sr. No.	Groups	Total cases	Successful	Complete abortion	Incomplete abortion
1.	I	100	100 (100%)	64 (64%)	36 (36%)
2.	II	150	36 (72%)	16 (44.4%)	20 (55.6%)
3.	III	150	48 (96%)	40 (83.3%)	8 (16.7%)

TABLE IV
Side Effects

Sr. No.	Side effects	Group I	Group II	Group III
1.	Nausea	12	—	—
2.	Vomiting	30	—	—
3.	Disrrhoes	60	—	—
4.	Broncho-spasm	—	—	—
5.	Palpita-tions	8	—	—
6.	Lactation requiring suppres-sion	—	20	30
7.	An other	—	—	—

Discussion

It has been established beyond doubt that PGE1, E2, F1a, F2a and its analogues are potent uterine stimulants at all stages of gestation when administered by different routes.

A distinct advantage of intramuscular method is that risk of introduction of sepsis is minimal. This route can be used when intra-ammiotic approach is not possible as when membranes are ruptured and gestation is less than 16 weeks. Purandare (1975) in his series reported success rate of 97.8% when termination with intramuscular prostaglandins was done. Our findings of 100% success rate are in consonance with those of Purandare (1975). Major drawback is high incidence of incomplete abortions. Brenner *et al* reported an incidence of 29% incomplete abortions in their series. Purandare (1975) reported incidence of 48.8% incomplete abortions.

The only method which can be used in medical diseases complicating pregnancy is termination by mechanical stimulation of uterus like bougie. Extraovular placement of rubber tube has been advocated by George (1978), for midtrimester abortions. The mode of action of catheter is mechanical irritation of the uterus leading to myometrial contractions. Catheter also separates he membrances from uterine wall and augements the abortion process. Mishra and Jha (1981) in their series has described success rate of 93% with extra-amniotic catheters. In our series, success rate came out to be 72%.

All the 3 months used in this small series have their own advantages and disadvantages. In evaluating the merits and demerits of these methods, what one achieves in one aspect loses at the other end.

Intramuscular route of administration of PG is useful in clinical conditions where amniocentesis is contraindicated.

Prostaglandins produced quicker abortions with 100% success rate. The mean induction abortion interval in this group was 14.01 hours. Earliest abortion took place in 4 hours. No lactational problem was encountered. High incidence of gastro-intestinal side effects and incomplete abortions (36%) are major drawbacks. This method cannot be used in cases of pregnancy associated with medical diseases. In developing countries, it is not within the

reach of a common man because of high cost.

Mechanical stimulation of uterus by catheter offers ease of insertion with lesser side effects and complications. It can be used in cases with associated medical diseases where prostaglandins are contra-indicated.

If insertion of a cathetar is not supplemented by oxytocin drip as in Group II, induction abortion interval is prolonged (40.13 hours) Success rate was 70%. Number of incomplete abortions (55.6%) is also high.

In Group III, success rate was 96% with high number of complete abortions (83.3%) in reasonable induction abortion interval (28.07 hours).

Retention of catheter causes whole time discomfort to the patient in last 2 groups. Constant supervision of nursing staff to maintain oxytocic doses in group III is another drawback. This method has high incidence of post abortal lactation.

Thus it can be concluded that mechanical stimulation of uterus and oxytocin supplementation is safe and can be used in pregnancy associated with medical diseases. So we can safely depend on mechanical stimulation of uterus and oxytocin supplementation for our cases of midtrimester abortions.

References

1. Brenner, W. E.: Am. J. Obstet. Gynec. 123: 306, 1975.
2. George, S.: Bougie Method of Midtrimester abortions presented at the I.C.M.R. Scientific meeting on abortion Institute for research in reproduction, Bombay, 1978.
3. Mishra, J. and Jha, R.: J. Obstet. Gynec. India, 31: 575, 1981.
4. Purandare, V. N.: Proceedings of 2nd International seminar. Page 581, 5th March, 1975.