

## NON-SURGICAL APPROACHES TO MIDTRIMESTER TERMINATION OF PREGNANCY

by

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### Introduction

Intra-amniotic and extra-amniotic injections are standard methods of termination of pregnancy today for midtrimester abortions; but both these procedures need certain amount of technical skill. For a procedure to be widely acceptable, for a large scale use, the need for such technical expertise should be the bare minimum. Efforts are therefore being made to simplify the administration of the abortifacient. Prostaglandin is so far the only compound that can be administered both systemically and locally. Development of longer acting analogues has simplified the approach further.

In this paper we attempt to evaluate the relative merits of three non-surgical approaches and compare them with the results of intra-amniotic injection of 15 me PGF<sub>2a</sub> 2.5 mgm, as this route so far, gave us the best results. The patients

were treated at the Department of Obstetrics & Gynaecology, K.E.M. Hospital, Bombay.

### Material and Methods

One hundred and twenty women between 13th to 20th week of gestation were included in this study. They were divided into 4 groups of 30 patients each.

*Group I. Intramuscular injection:* The patients had an initial intramuscular injection of 200 ugm of 15 mg PGF<sub>2a</sub> followed by 300 ugm every 3 hours till a maximum of 30 hours. 5 mgm of Diphenoxylate chloride (Lomotil) were given alongwith the initial 3 doses to reduce intestinal hypermotility induced by prostaglandin.

*Group II. Multiple dose suppository:* One suppository of 1.5 mgm of 15 me PGF<sub>2a</sub> me ester in a standard pharmaceutical base (Adeps Solidus) was inserted every 3 hours in the posterior fornix till 30 hours. Along with the initial 3 suppositories 5 mgm of Diphenoxylate chloride were supplemented. Following the insertion of the suppositories, patients were asked to lie in bed for at least an hour.

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**Group III. Single dose suppository:** These patients had only a single suppository of 3.0 mgm of 15 me PGF<sub>2a</sub> me ester in 2.2 mgm of Witepsol E-76 (Nitro Nobel). This fat melts at about 3°C higher than 'Adeps Solidus', Bygdeman *et al* (1977). The vehicle being a high melting fat, the drug could be more slowly and gradually released, thus making only a single administration effective. This group too had 5 mgm of Diphenoxylate chloride supplemented every 3 hours for the initial 9 hours.

The women had intra-amniotic injection 2.5 mgm of 15 me PGF<sub>2a</sub> in a single dose.

The abortion time was defined as the period between initiation of the therapy and expulsion of the fetus or the whole conceptus into the vagina. If the patient had not aborted within 30 hours, following initiation of therapy, the case was re-evaluated and a second procedure was resorted to complete the process, if necessary. Placenta was removed surgically at the end of 2 hours after the expulsion of fetus if it was not expelled by then spontaneously. The clinical course of all patients was observed closely.

**Group IV. Intra-amniotic injection:**

### Results

TABLE I  
Age

	I.M. 15 me PGF <sub>2a</sub>	Vag. Supp. (multiple)	Vag. Supp. (single)	I.A. 15 me PGF <sub>2a</sub> 2.5 mgm
20 and less	10	16	15	18
21 to 30	13	7	8	8
More than 30	7	7	7	4

GRAVIDA

	I.M. 15 me PGF <sub>2a</sub>	Vag. Supp. (multiple)	Vag. Supp. (single)	I.A. 15 me PGF <sub>2a</sub> 2.5 mgm
I	15	23	19	18
II	9	1	3	7
III and above	6	6	8	5

The majority of the patients were young nulliparous.

TABLE II  
Gestation Weeks

	I.M. 15 me PGF <sub>2a</sub>	Vag. Supp. (multiple)	Vag. Supp. (multiple)	I.A. 15 me PGF <sub>2a</sub> 2.5 mgm
13-14	11	8	-	-
15-16	6	2	16	9
17-18	3	12	4	6
19-20	10	8	10	15
Mean	16.3	16.2	17.3	18.3

Majority of the patients were between 15-20 weeks of gestation except in Group I (Intramuscular injection) where 11 patients were in 13-14 weeks of gestation.

TABLE III  
Success Rate

	I.M. 15 me PGF <sub>2a</sub>	Vag. Supp. (multiple)	Vag. Supp. (single)	I.A. 15 me PGF <sub>2a</sub> 2.5 mgm
Total cases	30	30	30	30
Net success	97%	90%	90.5%	100%
Success within 30 hours	83%	87%	86%	80%
Mean Induction—	2.2 hrs.	4.5 hrs.	1.75 hrs.	5.3 hrs.
Onset Interval (Min.-Max.)	(0.12-9.00)	(2.30-13.00)	(0.50-6.00)	(1.30-17.00)
Mean Induction—				
Abortion Interval (Min.-Max.)	18.54 hrs. (2.00-58.30)	16.24 hrs. (7.00-34.50)	16.4 hrs. (9.00-32.25)	21.9 hrs. (7.45-42.40)

Intra-amniotic injections were effective in cent per cent of the cases. Patients aborted fastest with the vaginal suppositories.

TABLE IV  
Cumulative Abortion Rate

	I.M. 15 me PGF <sub>2a</sub> %	Vag. Supp. (multiple) %	Vag. Supp. (single) %	I.A. 15 me PGF <sub>2a</sub> 2.5 mgm %
6 hours	3.4	0	4.8	0
12 hours	23.4	13	38	13
18 hours	50	47	62	33
24 hours	80	80	81	63
30 hours*	83.5	86	86	80
36 hours	89	90	91	90
42 hours	93	90	91	97
48 hours	93	90	91	100

\* W.H.O. Time limit.

Almost 80% of the successful cases in each group had aborted within 30 hours.

TABLE V  
Immediate Complications

	I.M. 15 me PGF <sub>2a</sub>	Vag. Supp. (multiple)	Vag. Supp. (single)	I.A. 15 me PGF <sub>2a</sub> 2.5 mgm
Incomplete third stage	40%	40%	4.8%	36%
Infection	—	—	—	—
Excessive Bleeding (>500 ml.)	3%	—	—	—

Only 4.8% of the cases had incomplete abortion with the single dose suppository which is in sharp contrast to around 40% in rest of the groups.

One patient in the intramuscular group had excessive bleeding during curettage following incomplete abortion. She promptly responded to oxytocics, intravenous fluids and did not require blood transfusion.

#### Discussion

The highest rate of success so far has been obtained with the intra-amniotic injection of 15 me PGF<sub>2a</sub>. However, this procedure is suitable only after the 15th week of gestation, when amniocentesis is feasible. Between 13th to 15th week, extra-amniotic route can be resorted to. But both these procedures need technical skill and theatre facilities. Moreover,

TABLE VI  
Side Effects

	I.M. 15 me PGF <sub>2a</sub>	Vag. Supp. (multiple)	Vag. Supp. (single)	I.A. 15me PGF <sub>2a</sub> 2.5 mgm
No side effects	20%	8%	29%	23%
Vomits (Mean episode/patient)	67% 4.9	81% 2.0	71% 2.3	73% 2.3
Loose motions (Mean episode/patient)	73.4% 6.2	85% 3.2	62% 1.7	53% 2.1

Single dose suppository had the maximum percentage of patients free from side effects.

Intramuscular route had the highest incidence of gastro-intestinal side effects.

they have to be given up in cases where there is a persistent bloody tap. Prostaglandin administered as suppositories or intramuscularly can overcome these problems.

TABLE VII  
Analysis of Failures

Parity	I.M. 15 me PGF <sub>2a</sub>	Vag. Supp. (multiple)	Vag. Supp. (single)	I.A. 15 me PGF <sub>2a</sub> 2.5 mgm
I	1	3	2	-
II	-	-	-	-
III and above	-	-	-	-

#### GESTATION WEEKS

Gestation Weeks	I.M. 15 me PGF <sub>2a</sub>	Vag. Supp. (multiple)	Vag. Supp. (single)	I.A. 15 me PGF <sub>2a</sub> 2.5 mgm
13-14	1	2	-	-
15-16	-	-	-	-
17-18	-	1	1	-
19-20	-	-	1	-

All the failures were amongst primigravidae. There was no correlation of failure with the gestation period.

Intramuscular injection of 15 me PGF<sub>2a</sub> gave a very high success rate (97%). The injections were painless,

but they had to be repeated at frequent intervals. The systemic mode of delivery resulted in too frequent side effects. The primigravidae who required larger total dose had higher incidence of side effects.

It would be interesting to note that we found intramuscular prostaglandin very useful in the difficult cases, where the patients had failed to abort with other abortifacients, especially if the membranes had ruptured. It may also be used after expulsion of the fetus, to reduce the incidence of incomplete abortions.

The vaginal suppositories were even better accepted. The multiple dose suppositories were successful in a very high percentage of patients but the need of repeated administration was a source of inconvenience to both, the patients as well as the nursing staff. The single dose suppository is the simplest of all the existing procedures available today. Efforts are being made to make the suppositories more stable, as they often tend to deteriorate in the tropical heat.

Another merit that deserves consideration is that the complications of electrolyte imbalance, coagulation disorders are not feared with prostaglandins. There was no case of cervico-vaginal injury amongst the 344 cases at our clinic treated with the methyl analogues so far. This could be explained by the gradual increase in the base line uterine tonus with these analogues as substantiated by tocometric studies done by Bygdeman and Bergstrom (1976).

Only 4.8% of the cases with single dose suppository had incomplete abortion which is in sharp contrast to the higher incidence with rest of the methods. Patients treated with these suppositories tend to expel the products as a complete sac.

If the single dose prostaglandin suppository can be made available on a large scale, within reasonable cost, this could be almost an ideal method of induction of abortion, as these can be utilised even by paramedical staff under medical supervision.

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