

# ESTIMATION OF BLOOD LOSS IN SECOND TRIMESTER ABORTIONS INDUCED WITH INTRAMUSCULAR PGF<sub>2</sub> ALPHA

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## SUMMARY

One hundred and twenty cases of second trimester terminations were carried out with intramuscular PGF<sub>2</sub> alpha. In 60 cases laminaria tents were used before starting the doses. In rest of the cases no prior use of laminaria tents was made before giving the intramuscular doses of PGF<sub>2</sub> alpha. Blood loss was estimated preabortally as well as post-abortally using alkali haematin method. Comparative study of blood loss in primigravidas and multigravidas with this two methods is made.

### Introduction

The importance of accurate measurement of blood loss in obstetrical cases has been stressed by various workers. No less important is the need to make rapid assessment of blood loss in induced mid-trimester abortion by various methods. As then this will be a useful parameter in evaluation of safety and efficacy of different methods used today. Intramuscular PGF<sub>2</sub> alpha has the potential to be accepted on widescale as can be seen from a shorter induction abortion interval (17.5 hrs.) and absence of serious complications as reported by many workers. This is especially so with prior use of laminaria tents before starting the intramuscular doses. In the following study,

we have calculated preabortal and post-abortal blood loss by alkali haematin method in 2 groups of cases, in group A only IMPGF<sub>2</sub> alpha was used while in group B, laminaria tents were used before starting the doses. Comparison of preabortal and postabortal blood loss in these groups is made.

### Material and Methods

One hundred and twenty cases of second trimester abortions induced by IMPGF<sub>2</sub> alpha were studied. In 60 cases IMPGF<sub>2</sub> alpha (250 microgram) was given every 3 hourly for a maximum of 12 doses. In rest of the cases laminaria tents were kept in the cervix for 8 hours before giving prostaglandins. Blood loss was estimated preabortally i.e. from start of induction to expulsion of foetus as well as postabortally i.e. from expulsion of foetus to 4 hours after abortion. Blood

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lost preabortally and postabortally was collected over separate vaginal pads. Estimation of blood loss was done by measurement of alkali haematin as reported by Hallberg and Nilsson (1966). Pads were collected in plastic bags to which 1.5 to 2 litres of 5% solution of sodium hydroxide was added depending on number of pads soaked. The bag was then placed in a blender (a modified washing machine) for 20 minutes. This was to extract blood from pads, the haemoglobin element of which then reacts with sodium hydroxide to form alkali haematin. At the same time 1 ml of peripheral venous blood sample was taken from same patient and was added to 100 ml of 5% NaOH for comparison. An aliquot of homogenate obtained after blending for 15 minutes was removed to be centrifuged for 15 minutes at 3000 r.p.m. The optical density of both homogenate and 1 ml sample was determined at 550 nm. wavelength on a spectrophotometer. Blood loss pre as well as postabortally was calculated from following formula:

$$\text{Blood loss} = \frac{\text{O.D. at 550nm of Homogenate} \times V}{\text{O.D. at 550nm of peripheral} \times 100 \text{ sample.}}$$

V is the volume of 5% sodium hydroxide added to the bag.

The above procedure was standardised in respect to (i) recovery of blood, by adding known quantities (25 ml, 50 ml, 100 ml, 200 ml, 250 ml) of outdated blood

from blood bank to vaginal pads. Using known quantities of NaOH the blood in linen was calculated as described earlier and percentage of recovery of added blood was computed for different volumes of blood added. (ii) Recovery of blood with different volumes of NaOH (1 ltr; 1.5 ltr; 2 ltr) was calculated to determine the optimum amount of NaOH required for extraction of blood from linen. (iii) Time required for extraction of blood from pads was found to be 15-20 minutes. The error with this procedure was in the range of 0.1-0.3%.

*Observations*

In group A with the use of IMPGF<sub>2</sub> alpha alone—following observations were made:

Out of 60 cases, in 5 cases the trial was interrupted after 2 doses because of side effects. In remaining 55 cases, the observations made in Table I were recorded. (Table I).

In group B IMPGF<sub>2</sub> alpha with laminaria tents following observations were made. Out of 60 cases, in 3 cases the trial was interrupted after 3 doses because of side effects. In rest of the 57 cases the observations were recorded. (Table II).

In both the groups the success rate with multigravida was higher than the primigravida. The number of primigravidas (90.4% and 95.2%) as well as multigravida (94.4% and 100%) is very high.

TABLE I  
Midtrimester Abortions With IMPGF<sub>2</sub> alpha Alone

	No. of patients	No. of patients aborted	No. of cases having complete abortion	Success rate
Primigravida	30	21	19	70%
Multigravida	25	18	17	72%

TABLE II  
Midtrimester Abortion With IMPGF<sub>2</sub> alpha + Laminaria Tents

	No. of patients	No. of patients aborted	No. of cases having complete abortion	Success rate
Primigravida	31	21	20	67.7%
Multigravida	26	19	19	73.0%

As regard the blood loss following observations were made:

Table III compares the blood loss in the two groups. The pre-abortal blood loss in group A and B for primigravidas ranged from 15-90 ml with mean of 61.4 ml and 49.9 ml respectively. For multigravidas the preabortal blood loss range was from 18-86 ml with mean blood loss of 62.7 ml in group A and 42.4 ml in group B. Post-abortal blood loss in primigravidas in group A and B ranged from 32-238 ml with an average of 103.5 ml for group A and 97.6 for group B. In multigravidas the post-abortal range was from 23-266 ml with an average blood loss of 119.8 for group A and 114 ml for group B. For primigravidas the total blood loss in groups A and B was 164.9 ml and 147.5 ml respectively. For multigravidas the total blood loss in groups A and B was 172.5 ml and 156.4 ml respectively.

In cases of incomplete abortions blood loss ranged from 185-223 ml in group A

while 212 in group B. Four cases had cervical injuries in group A while 2 cases had cervical injury in group B. The average blood loss in those cases who had cervical injuries in group A was 205.9 ml while in group B it was 194.6 ml.

#### Discussion

In both the groups, pre-abortal blood loss was considerably less than the post-abortal blood loss. In group A where IMPGF<sub>2</sub> alpha alone was used the pre-abortal blood loss was more than in cases where prior use of laminaria tents was made because of the longer induction abortion interval in Group A (22 hours) as compared to 15 hours in group B. In multigravidas of both the groups the pre-abortal blood loss was less than the primigravidas which can be explained on the basis of a shorter induction abortion interval in multigravidas. There is not much of a difference in post-abortal

TABLE III  
Pre-abortal and Post-abortal Blood Loss in Group A & B

		Group A		Group B	
		Primi ml.	Multi ml.	Primi ml.	Multi ml.
Pre-abortal blood loss	Mean	61.4	62.7	49.9	42.4
	Range	33-90	24-79	15-81	18-86
Post-abortal blood loss	Mean	103.5	119.8	97.6	114
	Range	52-238	46-266	32-212	23-245
Total blood loss		164.9	172.5	147.5	156.4

