PROPHYLACTIC 15 (S) 15 METHYL PGF_2 ALFA FOR CONTROL OF POST PARTUM BLEEDING A COMPARATIVE STUDY WITH METHYL ERGOMETRINE

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SUMMARY

In this study, 100 patients were recruited, each with one or more risk factors for atonic postpartum haemorrhage. 50 patients received I.V. methyl ergometrine (control group) and another fifty (study group) received I.M. PGF_2 alpha (prostodin) at the birth of the anterior shoulder. It was observed that the duration of third stages (3 mnts., 45 seconds) and the average blood loss (86 ml) were significantly less in the study group. The patients with atonic PPH in the control group were successfully treated with prostodin and there was no case of PPH in the prostodin group.

INTRODUCTION

Adequate retraction of uterus in the third stage of labour is essential for separation of placenta and the control of the third stage bleeding as well as prevention of postpartum haemorrhage. The availability of powerful uterotonic agents such as Oxytocin and Ergomatrine have contributed a great deal to the prevention of mortality and morbidity due to postpartum haemorrhage. Intravenous ergometrine is used commonly with the delivery of the anterior shoulder of the fetus specially in women who have conditions predisposing to atonic postpartum haemorrhage. Several workers have reported that this method resulted in practically bloodless third stage. Postglandin E_2 and F_2 are considered to be physiological stimulants of myometrial activity, and have been used in Obstetrics for induction of labour and abortion. The 15 (S) 15 methyl (PROSTODIN - ASTRA

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IDL, LTD.,) has the advantage that it can be given by intramuscular route and also is more potent and long acting than the natural PGF_2 Alpha.

The present study was an attempt (1) to know the incidence of risk factors for atonic postpartum haemorrhage in Government General Hospital, Guntur. (2) To compare the effectiveness of prophylactic 15 (S) 15 Methyl PGF_2 alpha with that of routinely administrated Methyl erogmetrine. (3) To evaluate SAFE T'JECT, a preloaded syringe filled with 200 microgram of Prostodin.

MATERIAL AND METHODS

For this study, 100 women who delivered in this institution were recruited, each with one of or more risk factors of Atonic postpartum haemorrhage. The women were divided into 2 groups by randomised double blind study, one group received 200 micrograms of Prostodin injection in preloaded syringe (SAFE T'JECT) other group received 400 micrograms of Methyl Ergemetrine intravenously, at the time of delivery of the anterior shoulder.

Organic heart disease, bronchitis, bronchial asthma, hypertension (200/120) epilepsy and renal disease were regarded as contraindications for the purpose of this study.

The patients were continously monitored in the labour room. The duration of first and second stage of labour were noted. The placenta was expelled by applying Brandt Andrew technique after waiting for signs of placental separation. The duration of 3rd stage was recorded. The blood loss was estimated during the 4 hours postpartum period by collecting the blood and clots in a separate sterile container kept near the perineum. The vital data was recorded. Adverse reactions such as vomiting, diarrhoeas, fever, flushing etc., were recorded. No premedication was given to control them.

Blood loss at Caesarean Section

The cases of elective caesarean section under general anaesthesia were

Table I

Type of Cases Included

With Multiple Indications		Study Group	Control Group
1.	Grand Multi	24	26
2.	Twins	8	4
3.	Hydramnios	3	2
4.	Previous Scar on the Uterus	14	10
5.	Prolonged Labour	2	6
6.	P. I. H.	4	6
7.	Previous History of P. P. H.	1	—
8.	Fetal Macrosomia	2	1

included in the study (matched age, parity wise : no extention of uterine wound at the time of delivery). Five cases received prostodin and five other cases received methyl ergometrine. Blood loss was collected in the suction bottle and the vaginal bleeding in a kidney tray.

RESULTS

18% of the women were in the age group of 15-20 : 55% were in 21-30 and 27% were between 31 to 40 years. 50% of women were of high parity (5 and above).

There is not much of a significant difference in the Ist and IInd stages of labour in both the groups but the duration of 3rd stage is less in the study group.

The Duration of III stage was significantly Less in the Study Group

The average duration of 3rd stage in control group and study group was 7 & 3.45 minutes respectively. The duration of 3rd stage was less than 4 minutes in 22% and more than 4 minutes in 78% in the control group. But in the study group it was less than 4 minutes in 90% of the cases.

The average blood loss immediately after delivery was 64 ml. (Similar to the Control group) average blood loss 4 hours after delivery was 86 ml. which was significantly less than that compared to the control group.

The amount of blood loss shows a direct relationship to the duration of third stage. Reduction in the duration was accompanied by a reduction in the amount of blood loss.

Side Effects

The incidence of vomiting was the same in both the groups. It was mild and no treatment was required. Loose motions were observed in 8% of the cases in the study group, whereas no cases were reported in the control group.

Failures

Three cases of methyl Ergometrine failure were successfully treated with prostodin administration (once the blood loss exceeded 500 ml.)

DISCUSSION

Anjenayulu R. et al (1988) compared the efficacy and safety of Carboprost

Table II

Average duration of 3rd Stage

Duration in Mts. Control Group	1 - 4	4 - 7	7 - 10	More than 10	Average
No. of Patients	11	36	6	1	7
Percentage	22%	64%	12%	2%	
Study Group :					
No. of Patients	45	5	—	—	3.45
Percentage	50%	10%			

Table III

Average Blood Loss in ML

Group	Soon after	4 hrs later
Control Group	63	140
Study Group	64	86

control of refractory atonic PPH. These authors also pointed out that systemic administration results in therapeutic blood levels in the myometrium in preference to dependance on diffusion of locally administered drug.

The present study established the safety and efficacy of PROSTODIN

Table IV

Comparison of Duration of III Stage and Blood Loss

Duration of III St. in Mts.	1 - 4	4 - 7	7 - 10	More than 10
Control Group				
Blood Loss in Ml.	137	165	184	230
% of Cases	22%	64%	12%	2%
Study Group	88	168	—	—
Percentage	90%	10%	—	—

with Ergometrine and controls who did not receive any oxytocic for prophylactic control of PPH. They concluded that the duration of 3rd stage was shortened to 6.1 minutes following ergometrine, 3.5 minutes following carboprost; 3rd stage duration was 7.6 mts. in the control group. Average blood loss noted by them was 154 ml. with Ergometrine 95.2 ml with Carboprost, 233.2 ml. in controls Jocobs & Arias (1979) used intramyometrial PGE_2 alpha for control of 3rd stage bleeding. Hertz et al (1980) reported that intractable Atonic PPh not responding to usual medical measures responded to treatment with intravaginal PGE_2 suppositores.

Corson & Bolongnese (1977) reported for the first time on the efficacy of intramuscular PROSTODIN for the when given I.M. in a dosage of 200 micrograms at the time of anterior shoulder delivery. Bleeding was significantly less and the effectiveness persisted for more than 4 hours.

It was proved that after single I.M. injection, peak plasma levels were reached within 15 minutes and a decrease to pre injection levels was observed in 2 to 3 hours. Csapo & Pulkkiven (1979) suggested that the impact provoked by I. M. treatment, is capable of stimulating further endogenous prostaglandin synthesis and this could be responsible for the continuing uterotonic activity observed for some hours after a single injection of carboprost.

In the present study, though the blood loss varied from as low as 30 ml to and as high 500 ml, mean blood loss was

significantly reduced. Patients with minor gastrointestinal side effects made uneventful recovery without any medication.

Safe T'Ject

It is a preloaded syringe filled with prostodin in a "READY TO USE" form. It can be administered with ease, by medical & Paramedical personnel without drug wastage. It is extremely useful in emergency situations. It cannot be reused. It is most convenient, where fixed dose drugs are required to be given.

CONCLUSIONS

In conclusion it is observed that a single I.M. injection of prostodin administered prophylactically is superior to methylergometrine. Prostodin significantly shortens the duration of IIIrd stage; reduces the blood loss, and eliminates PPH. Hence the drug can be used as routine for the management of IIIrd stage of labour in all high-risk patients. The benefits of using prostodin outweigh the cost of the drug.

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