

Comparative analysis of prophylactic intramuscular 15 PGF₂α 125 µg V/s intravascular methylergometrine for prevention of atonic post-partum haemorrhage (PPH) in high risk cases

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Abstract

Objectives: To assess, evaluate and compare the safety and efficacy of intramuscular 15 PGF₂α 125 µg and intravenous 0.2mg methylergometrine during active management of third stage of labour in high risk women who are prone to develop atonic postpartum haemorrhage.

Methods: 150 women at high risk factors of developing atonic PPH were divided into two groups. Group A received methylergometrine 0.2 mg intravenously and group B received 125mg PGF₂α intramuscularly at the time of delivery of anterior shoulder prophylactically. Duration of third stage of labour, amount of blood loss, side effects of drugs used and complications, if any were noted and analyzed.

Results: Amount of blood loss was more in group A as compared to group B. Diarrhoea was seen in 3 cases in prostaglandin group, none in methylergometrine group. Nausea, vomiting were seen in 2 women in each group.

Conclusions: Prophylactic intramuscular 15 PGF₂α 125 µg is a better alternative to prophylactic intravenous methylergometrine 0.2 mg in high risk women who are more prone to develop atonic PPH.

Keywords: 15 PGF₂α 125 µg, methylergometrine, atonic post-partum haemorrhage

1. Introduction

Blood loss of more than 500ml during vaginal delivery[1] or more than 1000ml during caesarean section[2] is taken as postpartum haemorrhage (PPH) or any bleeding from or into the genital tract after delivery of baby, which results in signs and symptoms of haemodynamic instability or a drop in postpartum haematocrit greater than 10% of prenatal value[3].

Post partum hemorrhage is one of the major causes of maternal morbidity and mortality. It accounts for nearly 25% of maternal deaths in India. High prevalence of anemia and multiparity add to this morbidity in developing countries like India.[4] Hence active management of third stage of labour is the most important step towards reduction of maternal morbidity and mortality.

Administration of oxytocics makes labour safe. Commonest oxytocic used is methylergometrine. Prostaglandins are natural stimulants of myometrial contraction and have proved to be effective not only in induction of labour and abortion but also in controlling PPH. 15 PGF₂α 125 µg is a synthetic derivative of prostaglandins and has advantage that it can be given intramuscularly, and is

more potent. Mostly, 15 PGF₂α 125 µg is used as a therapeutic measure in controlling atonic PPH when other measures (uterine massage, oxytocin) fail even after intravenous ergometrine. Hence, present study was undertaken to analyze the efficacy of prophylactic 15 PGF₂α 125 µg in women prone to develop atonic PPH.

2. Materials and Methods

This was prospective descriptive study conducted at Sri Aurobindo Medical College and PG Institute, a tertiary care centre, during January 2011 to December 2011. 150 women with vertex presentation and spontaneous onset of labour at term presentation and high risk factors for developing atonic PPH, like grand multipara, antepartum hemorrhage, previous h/o PPH, hydramnios, twins, prolonged labour, large baby and anemia were included in the study. Those having bronchial asthma, hypertension, renal disease, cardiac disease, endocrinal problem, epilepsy, coagulation disorders and sensitivity to prostaglandin or methylergometrine were excluded from the study. They were randomly divided in two groups of 75 each. Group A received methylergometrine 0.2 mg intravenously and group

B received 15 PGF2α 125 µg intramuscularly at the time of delivery of anterior shoulder. In twins it was given during the delivery of anterior shoulder of second baby. The interval between injection and expulsion of placenta, amount of blood loss, third stage complications, side effects and need for second injection of additional drug were noted.

3. Results

Table 1: Distribution of high risk factors

S. No	High Risk factors	Group A (n=75)	Group B (n=75)
1.	Grand Multipara	17	15
2.	Ante-partum haemorrhage	5	8
3.	Previous h/o Post partum haemorrhage	7	5
4.	Hydramnios	4	9
5.	Twins	11	6
6.	Prolonged labour	3	7
7.	Big baby	6	4
8.	Anemia	17	21

Amount of blood loss was more in group A as compared to group B. Rise in systolic and diastolic blood pressure in group B was not significant, but difference was significant in group A. Mean fall in haemoglobin was significantly less in group B. There were five cases of atonic PPH in group A. There were no cases of retained placenta and hemorrhagic shock in either group. Additional drug was required in five cases of group A and none in group B. Diarrhoea was seen in 3 cases in prostaglandin group, none in methylergometrine group. Nausea, vomiting were seen in 2 women in each group. None of the side effects were severe enough to need energetic management in either group.

4. Discussion

Postpartum haemorrhage is excessive bleeding after delivery[5][6]. It can be atonic when bleeding is from implantation site or traumatic when bleeding is due to trauma to genital tract or both.[7]

Active management of third stage of labour is important as prophylaxis of tonic postpartum haemorrhage which includes injection of oxytocics[8] at the delivery of anterior shoulder, early cord clamping and placental delivery by controlled cord traction after the signs of placental separation. Intramuscular injection of 15 PGF2α 125 µg is a life saving drug in atonic postpartum haemorrhage[9], which does not respond to conventional method (using methylergometrine). Use of prostaglandin F2 shortens the duration of third stage of labour and minimizes blood loss[7].

Prostaglandin F2α offers an advantage over methylergometrine in hypertensive cases. Methylergometrine is also a good drug for the management of postpartum haemorrhage but the serious side effects produced by the drug restrict its use especially in hypertensive, heart disease woman and severely anemic women. In our study blood loss was less as compared to methylergometrine group which is almost similar to other studies[4][10]-[12].

Anjaneyulu *et al*[11] and Bhattacharya *et al*[13] noted diarrhoea as the most common side effect, with vomiting in 2% of cases receiving prostaglandin. In the present study nausea and vomiting was seen in two cases in each group, whereas diarrhoea was seen in three cases in the prostaglandin group.

5. Conclusion

There was significant reduction in amount of blood loss in 15 methyl PGF2α group as compared to that in methylergometrine group. 15 PGF2α 125 µg given intramuscularly at the time of delivery of anterior shoulder is safe, well tolerated and more effective than methylergometrine in high risk women who are prone to develop atonic PPH.

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