PROSTAGLANDIN IN THE MANAGEMENT OF POST-PARTUM HAEMORRHAGE

By

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SUMMARY

Over a period of six months, twelve patients admitted to Tata Main Hospital in the Obstetric Unit, had post partum haemorrhage not responding to first line management with Oxytocin and ergometrin (Syntometrin). Exploration of the uterus confirmed the empty uterine cavity. This group of patients was selected for management of post partum hemorrhage with (15 S)-15-Methyl PGF_2—THAM (Prostin M-15). The results were extremely satisfactory as far as the control of hemorrhage is concerned. Only one patient out of 12 required a second injection. Five patients had side effects. Three had vomiting. Two patients had diorrhoea and one had bronchospasm. It may be concluded that patients with intractable post partum hemorrhage can be satisfactorily managed with Prostin M-15.

Introduction

Till recently Post Partum haemorrhage (PPH) was a dreadful obstetric complication. But with better antenatal management and screening for patients at risk of PPH its incidence is on the decline.

Active management of 3rd stage with intramuscular injection of syntometrine (Syntocinon 5 units, with ergometrine 0.5 mg) and delivery of placenta by controlled cord traction have been primarily responsible for the decline in incidence of PPH.

Currently most cases of PPH are due to either retained pieces of placenta or membranes or serious systemic complications like DIC.

But it has been seen that in a few patients PPH still occurs inspite of care taken during 3rd stage. It has also been observed that some patients may have atony of uterus not responding to first line management with oxytocin even after normal labour.

Recently with better understanding of its chemistry and mode of action on myometrium Prostaglandin (PG) has been given trial in the management of PPH with good results. Some reports indicating the promising role of PG in PPH have already appeared in literature.

We present here a report of 12 cases of intractable PPH treated at our Hospital with 15 methyl PG $F_{2\alpha}$.

Material and Methods

Selection of Patients for Trial

In the period of six months from Dec. '86 to May '87, 12 patients were selected

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for trial. All patients had intractable PPH not responding to first line management with syntometrine. By exploration empty uterus was confirmed. Genital tract trauma was excluded in all cases.

Treatment Schedule: 15 Methyl PG $F_{2\alpha}$ was injected intramuscularly, the initial loading dose being 0.25 mg. PG was repeated only if the 1st injection was not effective in controlling haemorrhage. Careful watch was kept on pulse, blood pressure and tonicity of uterus, as indicated by abdominal palpation and arrest of haemorrhage. Side effects were noted and haemoglobin was estimated after 24 hrs. of therapy.

Discussion

The clinical characteristics of patients analysed were as follows:

Age: The age of these patients ranged from 20 years to 36 years with a mean of 25 years.

Parity: 3 out of 12 were primigravidas, rest were multiparas.

Obstetric Complications: 3 patients had previous caesarean sections, one had hypertension, one had pre-eclampsia and four had overdistended abdomen in the index pregnancies.

Induction of Labour: 3 out of 12 patients required induction of labour with artificial rupture of membranes and oxytocin. Duration of labour did not exceed the usual time limit of 24 hours in any case.

Mode of delivery: Seven patients out of 12 had normal vaginal delivery, forceps were applied in 2 cases and lower uterine segment caesarean section was required in 3 patients. 3rd stage of labour upto delivery of placenta was uneventful, placenta was delivered within normal time limit in every case within 15 to 30 mts.

Brith weight of Babies: Ranged from 1.5 Kg to 4.2 Kg with a mean of 3.25 Kg.

Doses of PG: All patients except one required 0.25 mg of PG. only one case needed 2 such doses.

Results

Control of Haemorrhage: The efficacy of 15 Methyl PG $F_{2\alpha}$ in controlling haemorrhage was confirmed. Out of 12 patients only one needed 2 doses after which the haemorrhage was satisfactorily controlled. No patient needed any further surgical treatment like internal iliac arterial ligation and hysterectomy.

Injection contraction initiation interval: Earliest palpable uterine contraction following injection was after 15 mts and longest interval was 30 mts with an average of 19.5 mts.

Side effects: 3 patients had vomiting, 2 patients had diarrhoea and one patient had severe bronchospasm.

The last patient was a known case of asthma. Prostaglandin in this patient was administered as a last resort because of failure to control haemorrhage following the delivery of the baby during caesarean section and the patients general condition was fast deteriorating. The bronchospasm provoked by Prostaglandin was satisfactorily controlled by the attending anaesthesiologist. No further recurrence of bronchospasm was seen post operatively.

Systemic effects of Prostaglandin

(1) *Pulse Rate:* Five patients had tachycardia. The effect of drug on pulse rate of the patient was not remarkable excepting the tachycardia. Mean pulse rate at 15 mts of therapy was around 120/mt.

(2) *Respiration:* No significant change in respiratory rate and pattern excepting the bronchospasm, as mentioned earlier, was observed.

(3) *Temperature:* No pyrexial episode occurred in our series.

(4) *Blood Pressure:* The mean systolic blood pressure of all patients showed an upward trend upto 75 mts. after which there was a steady maintenance of pressure.

The diastolic blood pressure also followed the same pattern rising from 70 to 90 mm Hg upto 90 mts.

Extensive research on mode of action of PG on myometrium has already appeared in literature. The greater efficacy of PG as compared to other oxytocics probably lies in facilitating the calcium entry activating the myosine light chain kinase (MLK) resulting in smooth muscle contraction. Prostaglandins have been reported to change the permeability of the membrane thus influencing the levels of intracellular calcium. On the other hand oxytocin regulates intracellular calcium only by acting on sarcoplasmic reticulum and calcium magnesium ATPase system of the myometrial cell membrane.

Further, it appears that PG also has the prospect of reducing the need for desperate surgical intervention like internal iliac arterial ligation and hysterectomy.

The high incidence of side effects noted in 6 out of 12 cases may be clinically disturbing but is of no serious consequence and the advantage gained outweighs the discomfort of side effects.

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