THE EFFECT OF INTRAMUSCULAR (15) S-15 METHYL PROSTAGLANDIN F$_{2\alpha}$ IN REFRACTORY POST PARTUM HAEMORRHAGE

by

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Uterine atony remains the most common cause of postpartum haemorrhage (PPH) and its treatment remains a significant problem despite availability of banked blood and oxytocics. The conventional treatment of mild atonic PPH includes uterine massage, administration of parenteral pitocin and/or methergine, and, if this is ineffective, a final resortment to operative management (Hypogastric artery ligation or hysterectomy). Recent reports suggest that cases of severe PPH unresponsive to oxytocics and uterine massage all responded promptly to an intramyometrial injection of PGF$_{2\alpha}$ or an intramuscular injection of PGF$_{2\alpha}$ ester (Takagi *et al* 1976; Corson and Bologenese 1977; Jacob and Areas 1980). Hertz and Sokol (1980) reported a case of refractory PPH treated with vaginal PGE$_2$ suppository. Authors reported successful use of intramuscular (15) S-15 methyl prostaglandin F$_2$ alpha-THAM (15 Me-PGF$_{2\alpha}$) in the control of life threatening PPH in a case of fulminant viral hepatitis (Jain *et al* 1981). There is an on going study with us to determine the efficacy of 15 Me-PGF$_{2\alpha}$ to stimulate uterine contraction with attendant hemostasis in the patients with PPH that is refractory to conventional management. Recently, we had a bad outcome in an anaemic patient, which prompted us to report our experience on this issue.

Material and Methods

Table I summarises 8 cases who were treated for PPH with 15 Me-PGF$_{2\alpha}$. Six of 8 cases who had atonic PPH and were unresponsive to conventional therapy were successfully treated. Case 7 who underwent caesarean section for central placenta praevia with severe anaemia, continued to have slow trickle of blood inspite of sufficient uterine contractile response to 15 Me-PGE$_{2\alpha}$. Hysterectomy was done in view of shock, severe anaemia and continued blood loss. Histopathological examination later cinfirmed the diagnosis of placenta accreta.

Case 8 was mildly anaemic multigravida, who was induced successfully with pitocin for hydramnios with anencephaly. Methyl ergometrine 0.2 mg was

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TABLE I

Clinical Data of Refractory PPH Cases Treated 15 Me-PGF_2

Case No.	Gravida	Parity	Age in yrs.	Delivery	Risk factor	Rx before 15 Me-$PGF_2\alpha$	Blood loss (ml) Before 15me-$PGF_2\alpha$ After	Total dose (microgram)	Adverse reaction	Outcome/ comemnts
1.	3	3	27	Vaginal	—Twins —Pitocin induction	Pitocin infusion Methergin I/V & I/M Fundal massage	800/100	250	Nil	Successful/No blood transfusion
2.	4	3	25	Vaginal	H/o PPH in previous one pregnancy	—Pitocin infusion —Methergin I/V —Fundal massage Uterine exploration	850/50 (Hypertension)	250	Nil	Successful/No blood transfusion
3.	1	1	25	Vaginal	—fulminant viral hepatitis (serum bilirubin 14.5 mgm%)	—Pitocin infusion —Methergin I/V, I/M (4 amp of 0.2 mg)	1200/30 (Hypertension)	250	Nil	Successful 2 blood transfusion
4.	2	2	21	Vaginal	—	—Fundal massage —Oxytocin infusion —Methergin I/V and I/M	800/150	250	Nil	Successful/No blood transfusion
5.	1	1	21	Vaginal	Infective hepatitis with Liver dysfunction (S. Bilirubin (6 mg%)	—Methergin I/V —Oxytocin infusion —Fundal massage	650/100	250	Nil	Successful/one blood transfusion

TABLE 1 (contd.)

Clinical Data of Refractory PPH Cases Treated 15 Me-PGF_2

Case No.	Gravida	Parity	Age in yrs.	Delivery	Risk factor	Rx before 15 Me-$PGF_2\alpha$	Blood loss (ml) Before 15me-$PGF_2\alpha$ After	Total dose (microgram)	Adverse reaction	comments comments
6.	1	1	24	Vaginal (forceps. delivery under G.A.	—Obstructed labour	—Methergin I/V —Oxytocin infusion —Fundal massage	800/50	250	Nil	Successful/one transfusion
7.	4	3	35	LSCS (G.A.)	—Central Placenta praevia —LSCS —Severe Anaemia (Hb-2 g%)	Methergin I/V, Oxytocin infusion Bood transfusion	1500/200 (Hypertension)	250	Nil	Hysterectomy (HPE-Placenta accreta) Total blood loss replacement 1500 ml
8.	4	3	34	Vaginal	—Hydramnios with Anencephaly —Oxyocin induction —Anaemia (Hb 8.5 g%)	—Oxytocin infusion I/M, Fundal massage —Blood transfusion (Rapid I/V fluids)	1500/500 (Hypertension)	250	Nil	Death/Total blood replacement 400 ml

administered intravenously at delivery of anterior shoulder. The placenta was easily expressed 4 minutes following delivery. Pitocin infusion was continued following the end of third stage. Thirty minutes following the delivery, the patient suddenly lost 800 to 1000 ml of blood from uterus. Blood pressure fell to 70-80 mm of Hg. Uterine massage, repeat methyl ergometrine intravenously; rapid infusion of haemecele, ringer lactate solution and 400 ml of whole blood; Vit K; and 250 micro grams of 15 Me-$PGF_{2\alpha}$ given intramuscularly were of no avail. Hysterectomy was decided and patient was shifted to operation theatre, where she had sudden cardiac arrest and died two hours and 40 minutes after delivery.

Discussion

PPH remains one of the most important causes of maternal deaths. Recent knowledge that intramyometrial injection of $PGF_{2\alpha}$ or an intramuscular injection of 15 Me-$PGF_{2\alpha}$ may provide rapid and sustained uterine contraction and prompt control of bloid loss should be kept in mind, as this procedure may be helpful and life saving when other treatments have failed. Experimental study in rabbits has established that post partum uterus requires 1000 fold less effective drug concentration of $PGF_{2\alpha}$ to produce maximum response as compared to pregnant uterus (Csapo and Csepli 1972). It is true that few successful reports in literature do not mean much in therapeutics. However, it is logical to try prostaglandins prior to proceeding to operative treatment.

Case 8 presents a problem in analysis because, the reason for haemorrhage and rapid deterioration of patient does not appear apparaent. Needless to say, that anaemic mother tolerates blood loss poorly, so that, in face of double stress anaemia and PPH), early resort to hysterectomy seems justified. Furthermore, the presence of hypotension means that probably the amount of blood loss was misjudged, because pregnant patients do not manifest signs of shock until bleeding is in excess of 1500 ml (Schumer, 1979).

Authors feel that prostaglandins have an useful place in mild to moderate atonic PPH. When PPH is severe, or is associated with hock, or continues despite conventional treatment including prostaglandins, placenta accreta, uterine rupture and coagulopathy must be suspected and effective treatment should be done before it is too late.

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