

# Active Management of Third Stage of Labour With Intraumbilical Oxytocin Injection

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**Summary:** An alternative method of active management of third stage of labour was tried to reduce IIIrd stage complications. Ten units of oxytocin in 20 cc of saline were injected into the umbilical vein immediately after delivery of the baby & clamping of the cord. The results of the study group (100 patients) were compared to those of the control group (100 patients), where IIIrd stage was managed by the traditional method of intravenous oxytocin. Mean duration of IIIrd stage was 5.6 min. as compared to 10.2 min. in the control group. Average blood loss was 125 cc & 275 cc in the study and control group respectively.

## Introduction

Anemia is one of the most common causes of maternal morbidity and mortality in our country. More than 70% of pregnant women suffer from anemia. Poor dietary intake with increased demands of pregnancy, hard work, low socio-economic standards, poor hygienic and sanitary habits, unavailability of good health care facilities along with repeated childbirths contribute to such a high incidence of anemia in pregnant women. Even a small loss of blood can be of great significance in these anemic patients. Thus every attempt should be made to prevent and reduce blood loss. This is particularly important as there is risk of blood borne infections like HIV, hepatitis and transfusion reaction.

Postpartum haemorrhage is an important cause of blood loss. Active management of third stage of labour is of prime importance in such patients. The aim of our study was to evaluate efficacy of the use of intraumbilical oxytocin in active management of IIIrd stage in reducing third stage complications and PPH.

## Material & Methods

This study was done at L.T. M. G Hospital, Sion, over a period of one year. The study included 200 low risk patients of normal vaginal delivery. Patients with antenatal risk factors like grand multiparity, PIH, heart disease, previous caesarean section, malpresentation, multipal pregnancy, antepartum haemorrhage were not included in this study. Patients with prolonged labour and those requiring oxytocin infusion or instrumental delivery were also excluded from the study. These patients were divided randomly in 2 groups of 100 patients each.

The cord was immediately clamped after delivery of the baby. In study group (A) 10 units of oxytocin in 20 cc of saline was injected into the umbilical vein, while control group (B) patients were managed by traditional intravenous oxytocin. In case of nonseparation of the placenta in 5 min., second dose of intraumbilical oxytocin was given in the study group. After noting the signs of separation of the placenta, it was delivered by Brandt-Andrew's method. Time required for IIIrd stage of labour was noted in the two groups. Blood loss was measured by collecting the blood in a basin and measuring it in a beaker. Injection methergin & prostodin were given after placental delivery whenever necessary. In case of non-separation of placenta for more than 20 minutes manual removal was done. Hemoglobin was repeated in all cases on second postpartum day.

## Results

Most of these patients were in the age group of 20-30 years. There were 26 primigravidae in group A & 22 in group B; 71% of group A and 67% of group B patients were booked patients. Average duration of labour was comparable in the two groups, it was 8.1 ( $\pm$  2.2) hours in study group and 7.4 ( $\pm$  2.6) hours in the control group.

Table I shows the duration of III rd stage in these patients. Third stage blood loss is shown in Table II.

Mean duration of IIIrd stage in group A 5.6 ( $\pm$  3.2) minutes was significantly less ( $P < .01$ ) than that in Group B-10.2 ( $\pm$  2.8) minutes. Also average blood loss in study group 125cc ( $\pm$  30) ml. was significantly less ( $P < .01$ ) than that in the control group 275 ( $\pm$  55)cc. Manual removal of placenta was required in 2 patients in control group.

Table I  
Duration of IIIrd Stage

Time in min.	Study Grp. (100)	Control Grp (100)
< 2	17	2
2.1 - 5	38	24
5-10	43	56
>10	2	18

Table II  
IIIrd Stage Blood Loss

Blood Loss in cc	A	B
< 50	20	9
55-100	37	16
105-200	25	29
205-300	15	34
> 300	3	12

The average decrease in hemoglobin in group A was 0.5-1 gm.% as compared to 1-2 gm.% in group B.

**Discussion**

Postpartum haemorrhage is a major obstetrical complication and one of the important but preventable causes of maternal morbidity and mortality. Late separation or nonseparation of the placenta is an important cause of IIIrd stage haemorrhage. Active management of IIIrd stage of labour by giving ergometrine injection at the time of delivery of the anterior shoulder is a routine practice in high risk patients. But this method requires precise timing and has a danger of entrapment of the placenta.

Table III  
Results

	A	B
1. Average duration of IIIrd Stage (Min.)	5.6 ± 3.2	10.2 ± 2.8
2. Average blood loss	125 ± 30 ml.	275 ± 55 ml.
3. Ergometrine required	9 Patients	37 Patients
4. Prostin required	1 Patient	6 Patients
5. Retained placenta	-	2 Patients
6. Fall in hemoglobin	0.5-1 gm.%	1-2gm %

The concept of intraumbilical oxytocin was devised by Golan et al (1983). Oxytocin injected into the umbilical vein reaches the placental bed in relatively high concen-

tration. This stimulates uterine contractions, thus decreasing the placental attachment site. The resulting tension causes the decidua spongiosa to give way with the formation of a hematoma which then accelerates the process of placental separation. The time required for placental separation and IIIrd stage blood loss is thus significantly less with this technique. Our findings are consistent with the data reported by other authors (Dhillon et al 1992, Kaur et al 1995, Nayak 1993) as shown in Table V.

Table IV  
Comparisons

Author	IIIrd Stage Duration (Min.) Study/Control	IIIrd Stage Blood Loss (ml.) Study/Control
1. Dhillon (1992)	4.1/9.4*	100-200/300-400*
2. Kaur et al (1995)	3.2/4.2	125/152
3. Nayak et al (1993)	5.4/8.2*	40.2/100.5*
4. Present Study (1997)	5-6/10.2*	125/275*

\* P< .01 – significant difference

Thus, intraumbilical oxytocin appears to be a simple, inexpensive, noninvasive alternative to traditional methods of management of the IIIrd stage of labour. It can greatly reduce incidence of retained placenta requiring manual removal, which has the problems of anaesthesia, infection and trauma. This method can be particularly useful in patients in whom it is desirable to limit intravenous infusion of fluids or in whom ergometrine is contraindicated.

**References**

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