

**ORIGINAL ARTICLE**

**A STUDY OF SUSTAINED CERVICAL TRACTION IN THE PREVENTION OF POST  
PARTUM HEMORRHAGE**

**\*<sup>1</sup>Dr.T.Anitha Catherine Preethima, <sup>2</sup>Dr. V. Jayashree and <sup>3</sup>Dr.K. Latha**

<sup>\*1</sup>Junior Resident, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Chidambaram, Tamilnadu, India.

<sup>2</sup>Associate Professor, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Chidambaram, Tamilnadu, India.

<sup>3</sup>Professor, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Chidambaram, Tamilnadu, India.

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*Article History: Received 28<sup>th</sup> October, 2016, Accepted 7<sup>st</sup> November, 2016, Published 8<sup>th</sup> November, 2016*

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**ABSTRACT**

Worldwide, around 800 women die every day from preventable causes related to pregnancy or childbirth. The single most common cause is severe bleeding, which can kill a healthy woman within hours if care is substandard or delayed. Improved antenatal practices have led to the early identification of at-risk women and modern technology and new techniques have enabled effective management strategies so that now, in the western world, most of the morbidity and mortality arises from those cases which occur unexpectedly and could not have been predicted. Prompt and effective management and multidisciplinary involvement is paramount to save the lives of these women. The objective this study is to investigate the applicability and effectiveness of sustained cervical traction in decreasing the rate of PPH and the amount of postpartum blood loss.

**Keywords:** Postpartum haemorrhage, Oxytocin, Amr's maneuver.

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**1.INTRODUCTION**

The third stage of labour refers to the interval from delivery of the fetus to the separation and expulsion of the placenta. The major complication associated with this period is postpartum haemorrhage which is the most common cause of maternal morbidity and mortality in developing countries. Even in developed countries although maternal mortality rates are much lower, postpartum haemorrhage remains major concern. Numerous factors lead to increased incidence of postpartum haemorrhage like prolonged labour, multifetal gestation, large baby, anaemia, eclampsia and operative vaginal delivery. The active management involves administration of oxytocic drugs, controlled cord traction and uterine massage.

In spite of all the efforts done and in addition to the known strategies to prevent PPH, there is still a need, for more simple methods, either pharmacologic or non-pharmacologic and non-expensive that are suitable for the low resource setting.

Hamdy Amr, (2010) described a new maneuver by applying sustained cervical traction for the prevention of post partum haemorrhage.

**Description of the new Maneuver (AMR'S  
MANEUVER)**

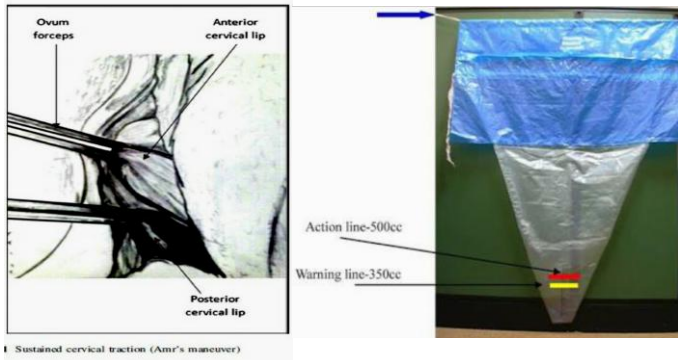
It was observed during normal delivery and after delivery of the placenta that sustained traction of the anterior and posterior lips of the cervix by ovum forceps for about 90 seconds leads to marked reduction in the amount of blood loss and significantly decreases the incidence of uterine atony. The traction of cervix should be sufficient to make the cervix reach the level of the vaginal introitus.

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*\*Corresponding author: Dr.T.Anitha Catherine Preethima,  
Junior Resident, Department of Obstetrics and Gynaecology, Rajah  
Muthiah Medical College, Chidambaram, Tamilnadu, India*

Many methods have been used to estimate blood loss. BRASS-V drape (Bellard et al., 2009; Dildy, 1998) is an accurate and

practical tool to measure blood loss occurring in the third stage of labor. The drape measured blood loss equally and as efficiently as gold-standard spectrometry



**Aim of the study**

To assess the applicability and effectiveness of sustained cervical traction in decreasing the rate of PPH and the amount of postpartum blood loss .

**2.METHODS**

**Study design and setting :**

Prospective study conducted at Rajah Muthiah Medical College for the period between January 2015– September 2016. The study involves 200 women in their third stage of labour after uncomplicated vaginal delivery.

**Inclusion Criteria :** Pregnant female aged 18 years or more who are candidate for normal labour.

**Exclusion Criteria :**

Pre eclampsia, Gestational diabetes mellitus ,Severe anemia ,multiple pregnancy, Fetal macrosomia (>4 kgs), Antepartum haemorrhage in present pregnancy ,Postpartum haemorrhage in previous pregnancy, clotting factor deficiency.

Detailed history (obstetric, medical and surgical ), complete general examination and obstetrical examination were done. All pregnant women had undergone normal vaginal deliveries.

The purpose of this study was clearly explained in patient’s own language and an informed consent was obtained.

- Group A comprised a total of 100 cases selected randomly .All subjects are closely observed for time of placental delivery. After placental delivery, the maneuver sustained cervical traction is being done for the duration of 90 seconds and the amount of blood loss is estimated by BRASS V DRAPES after the removal of forceps.
- Group B comprised a total of 100 patients selected randomly. All subjects are closely observed for time of placental delivery. After placental delivery, the amount of blood loss was estimated by BRASS V DRAPES.All patients were followed for 6 hours.
- The primary outcome measures was the amount of blood loss during third stage of labour. Secondary outcome measures was to estimate the rate of PPH. t-test was used for statistical analysis.

**3.RESULTS:**

- 1) 200 patients were evaluated to assess the effectiveness of sustained cervical traction for the prevention of post partum hemorrhage.
- 2) This study adopted the new maneuver advocated by Hamdy Amr ,(2003).
- 3) The mean age of patients in group A was 24.73±3.5 years and the mean age of patients in group B was 24.76±3.7 years. In both groups the subjects were of comparable age and were all low risk for PPH.
- 4) The mean gestational age in group A was 37.38 ±1.3 weeks and the mean gestational age in group B was 37.85 ±1.3 weeks. There was no significant difference in the gestational age distribution between two groups.
- 5) The mean blood loss in group A with episiotomy was 133± 35 ml and in group B was 204.14± 45.46 ml and the mean blood loss in group A without episiotomy was 138± 28 ml and in group B was 226.63±42.49 ml .
- 6) The mean blood loss associated with manual removal of placenta in group A was 133.42± 2 2.95 ml and in group B was 202.42±54.24 ml
- 7) The parity, gestational age ,episiotomy,mode of delivery of placenta were not associated with significant amount of amount of blood loss during third stage of labour.
- 8) The median value of blood loss of third stage was 134 ml in the group A as against the value of 380ml in group B. The mean blood loss of third stage in group A was 137.35±33.7 ml and the mean blood loss of third stage in group B was 371.35±98.91ml.
- 9) Post partum HB% drop in primigravida in group A was 1.02±0.3 gm% and group B was 1.69±0.74 gm% and this was statistically significant.
- 10) Post partum HB% drop in multigravida in group A was 1.46±0.34 gm% and group B was 1.99± 0.54 gm% and this was statistically significant
- 9) The difference in the drop in PCV in primigravida was 2.16 % in group A and 2.94% in group B and this was found to be statistically significant

**Baseline characteristics**

Groups	Age			
	No. of Mothers	Mean	S.D.	S.E. of Mean
Group A	100	24.73	3.536	0.354
Group B	100	24.76	3.747	0.375

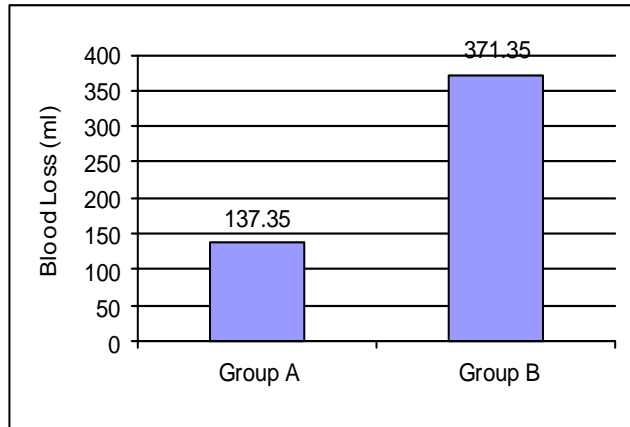
Groups	Gestational Age			
	No. of Mothers	Mean	S.D.	S.E. of Mean
Group A	100	37.38	1.362	0.136
Group B	100	37.55	1.388	0.139

Mode of Delivery	Mode of Delivery			
	Group A No. of Mothers	Group A Mean	Group B S.D.	Group B S.E. of Mean
Labour Normal	31	31.0	19	19.0
Labour Normal with Episiotomy	67	67.0	81	81.0
Outlet forceps with Episiotomy	2	2.0	0	0
Total	100	100.0	100	100.0

**Comparison of Blood Loss of III Stage of Labour between Two Groups**

Group	No. of Mothers	Mean	S.D.	S.E. of Mean
A	100	137.35	33.743	3.374
B	100	371.35	98.910	9.891

Calculated t-value	P Value	Level of Significant
22.406	0.001	Significant



**Descriptive Statistics of the Drop in Hb% and PCV in Group A and Group B**

Parameters	GROUP A		GROUP B		't' value	'p' value
	Pre-delivery	Post-delivery	Pre-delivery	Post-delivery		
Hb%						
Mean	11.485	10.677	11.23	10.25		
SD	1.6307	1.4042	1.423	1.301		
Median	11.00	10.00	11.00	10.00		
PCV						
Mean	33.61	31.78	33.20	30.79		
SD	4.900	4.146	4.298	3.841		
Median	33.00	30.00	32.00	29.00		
Hb% Drop	1.1410 SD 0.5412		1.6514 SD 0.4945		3.1762	<0.001
PCV Drop	3.2415 SD 2.1421		3.4462 SD 2.4595		4.3534	<0.001

**5.DISCUSSION:**

The third stage of labour begins immediately after the birth of the baby and ends with the expulsion of the placenta and fetal membranes; it is preceded by a sudden reduction of uterine size and concurrent contraction and retraction of the uterus. Reduced uterine size and limited placental elasticity and a tight compression by the uterus lead to separation of the placenta from the spongy deciduas (lining of the uterus).The third stage of labour is always a time of anxiety as the normal case can within minutes become abnormal and successful delivery can swiftly turn into maternal mortality. The commonest cause of maternal mortality is postpartum haemorrhage which accounts for about 25-30% of maternal mortality. Most of these deaths are due to postpartum hemorrhage resulting from atonic uterus .

**Possible mechanism to explain this maneuver**

It was learnt from the medical literature that stretch of the uterine cervix generates sensory impulses to the hypothalamus via stimulation of the stretch receptors, which

in turn stimulate the posterior pituitary to release oxytocin. This oxytocin produce more powerful contractions of the uterus, so the fetus is pushed more forcefully against the cervix stimulating more oxytocin release in a continuous positive feedback cycle. This is a known mechanism of labour progression. This positive feedback continues till expulsion and stops after delivery of the baby in the process of normal labor. In addition, these uterine contraction are reinforced as oxytocin stimulates prostaglandin production by the uterine lining.

It is supposed that the maneuver described in our study can be explained by the same mechanism mentioned before as it applies persistent stimulation to the stretch receptor of the cervix causing the release of more oxytocin. Consequently, contraction of the uterine muscle fibers and significant reduction of excessive blood loss after delivery of the placenta can occur. Another contributing factor, by which this maneuver decreases the amount of postpartum blood loss, is that it causes kinking of the redundant uterine arteries leading to slow blood flow. Hence allowing more suitable conditions for clotting and thrombin formation.

The fallacy of the study was difficult to measure separately bleeding after placental separation and the blood loss of third stage .However since this was applicable to both groups ,the observer bias and measurement error were negated.

**6.CONCLUSION:**

Postpartum hemorrhage remains the number one killer of women in developing countries. Although there are breakthroughs in the prevention and management of postpartum hemorrhage in high-resource settings, currently access to well-stocked and well-staffed facilities capable of rapid response to the critical emergency of postpartum hemorrhage are lacking in lower-resource settings. The newer strategy described in this article are promising interventions that may be lifesavers in developing countries. They require further clinical and operations research to demonstrate their effectiveness, efficacy, acceptability, and cost-effectiveness/sustainability before they can be introduced as large-scale programs.

AMR'S MANUEVER (sustained cervical traction) is simple, safe and on invasive method which reduces blood loss of third stage of labour thereby preventing postpartum hemorrhage.

**Recommendations**

Further investigation of the effect of sustained cervical traction on the maternal and neonatal outcome is needed. Sustained cervical traction should be encouraged for management of third stage of labour when no routine drug administration is planned because it is safe noninvasive and not requiring any effort, cost or equipments and this is relevant in rural areas.

**7.REFERENCES**

Abdel-Sater KA. 2011.Physiological positive feedback mechanisms. Am J Biomed Sci. 3(2):145-55.

- Bellard, MB, Laxmi, B, Goudar, SS and Kumar, A.2009. Standardized Visual Estimation of Blood Loss during Vaginal Delivery with its Complication Hemastocric Changes. South Asian Federation of Obstetrics and Gynaecolgy. 1(1): p. 29-34.
- Chibbar, R, Miller, F and Mitchell, F. 1993.Synthesis of Oxytocin in amnion,chorion and decidua may influence the timing of human parturition.J Clin Invest.,91:185-92.
- Dildy, GA .1998.Post partum Haemorrhage .Washington, DC:American College of Obstetrician and Gynaecologists.
- Hamdy, AMR. 2010.A new manue ver for the prevention of post partum haemorrhage. The Journal of Obstetrics and Gynecology of India, 65(4):241.

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