

## ABSTRACT

### INTRODUCTION

Improving healthcare for women during childbirth in order to prevent and treat PPH is an essential step towards the achievement of Millennium Development Goal 5 (MDG 5) **LABOUR-THIRD STAGE** The third stage of labour starts from delivery of baby till the delivery of the placenta. Mean time for third stage of labour is around 15 min. **Delivery of placenta mechanism:** Following delivery of baby, there is lowering of the uterine fundus due to 'retraction'. This is facilitated by the typical arrangement of the uterine musculature (circular) fibres. The retraction reduces area of the uterine surface where incompressible placenta is attached and separation occurs. Once separation occurs uterus will contract strongly forcing the placenta and membranes into the lower uterine segment. As the placenta is being inelastic, shears off its attachment through the deep spongy decidual layer.

**AIM AND OBJECTIVES :** To evaluate the applicability of vacuum retraction cannula in decreasing the blood loss in 3<sup>rd</sup> stage of labour. To compare the effects of AMTSL, AMTSL without uterine massage, AMTSL with vacuum retraction cannula excluding uterine massage in 3<sup>rd</sup> stage of labour. To compare the effectiveness of vacuum retraction cannula with same pressure maintained at different durations 5mins, 10 mins, 15 mins.

**MATERIALS AND METHODS :** Randomised comparison study.

**Sample size :** 100 cases using AMTSL, 100 cases using AMTSL without uterine massage, 100 cases using AMTSL with vacuum Retraction cannula excluding uterine massage. **Inclusion criteria :** Candidates for Normal labour. Oxytocin 10 units, Vacuum retraction cannula, Suction Apparatus Surgical drape for blood loss measurement. **Methods:** 300 pregnant mothers, delivered by Labour Natural in Government Rajaji Hospital is taken in this study. In this study, patients are selected randomly, among 300 patients all sorted into three groups, randomly 100 patients are selected for AMTSL alone during third stage of labour, 100 patients are candidates for Cannula insertion during third stage of labour, of these they again subdivided randomly into three subgroups for same pressure maintenance for different durations of 5 mins, 10 mins, 15 mins, 100 patients are selected for AMTSL without uterine massage in third stage of labour. Informed and written consent was obtained from all patients who participated in this study. This study confirms to the standards of Helsinki declarations.

**SUMMARY :** The age range of our study population lies predominantly between 19-25yrs with 64.4%, In our study multi gravidae mothers contributed little more(55%) than primigravidae mothers(45%)., Pregnant mothers with gestational age  $\geq 37$  weeks were higher(83.3) than the mothers with preterm gestation(16.7%) After dividing study population equally in to three groups, mothers with age range 19-25yrs contributed more to study in all three groups. On comparing all three groups according to total amount of blood loss, AMTSL with cannula excluding uterine massage group had significantly lower blood loss than other two groups which was statistically significant. According to cannula application time within AMTSL with cannula excluding uterine massage group when compared the total amount of blood loss, 10min application time had minimal blood loss which was statistically significant than in patients with 5min application time. According to age range comparison with blood loss, patients with age 19-25yrs and 26

to 30 yrs had significantly lower blood loss in AMTSL with cannula excluding uterine massage group than others. But in age group 31-36 yrs blood loss was not statistically significant for AMTSL with cannula excluding uterine massage group. By gestational age comparison with total amount of blood loss, patients with  $GA \geq 37$  weeks within cannula group had lower blood loss than other groups which was significant in nature. But when comparing the patients with  $GA < 37$  weeks of cannula group blood loss was not significant for the group. Primigravidae patients within AMTSL with cannula excluding uterine massage group had significantly minimal blood loss when compared with primi of other two groups. But multigravidae of all three groups had no statistically significant difference in blood loss in our study. Difference between antenatal haemoglobin and postpartum haemoglobin was not statistically significant for AMTSL with cannula group. In all three groups there was not significant change in haemoglobin values post delivery. After quantifying the blood loss amount into different ranges in all three groups, we compared the effectiveness of procedure. Almost all patients within AMTSL with cannula group had blood loss centered in  $< 200$  ml, 200-300 ml categories when compared to other groups which is statistically significant for cannula group. In patients within AMTSL with cannula excluding uterine massage group, according to cannula application time, 10 min cannula application subgroup had cent percent blood loss in the range of  $< 200$  ml, 200-300 ml categories when compared to 5 min cannula application subgroup. which was significant statistically.

**CONCLUSION :** Following third stage of labour, vacuum retraction cannula helps in maintaining the uterine physiology of normal contractile and retractile nature. This is very handy, ambulatory, ready to use and cost effective device and it takes negligible time to arrange and can stop significant bleeding when applied for 10 and more minutes as shown in this study. During waiting period of 10 minutes episiotomy wound or vaginal laceration can be sutured. As it decreases the blood loss in 3<sup>rd</sup> stage of labour, we can prevent life threatening post partum haemorrhage by instituting this simple technique in all settings including low resource setting with sure success. This vacuum suction cannula is very simple to use and no need of any mastering in handling this device. So we can train people even in primary health centre like nursing midwives and untrained dhais. As we applied this device only in nontraumatic deliveries, we expect wider applications of this technique in conditions like placenta accreta, and placenta previae with some necessary changes in the future.

**Key words :** placenta and membranes, Oxytocin, placenta accrete, Vacuum retraction cannula