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Research Article

An evaluation of the practice of active management of third stage of labour in a teaching hospital

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ABSTRACT

Background: Worldwide post-partum haemorrhage (PPH) is the most common cause of maternal mortality. Atonic PPH accounts for 80% of the cases. Risk of PPH can be reduced by 60% by actively managing the third stage of labour. International Federation of Gynecology and Obstetrics (FIGO), International Confederation of Midwives (ICM) and World Health Organization (WHO) recommend routine use of active management of third stage of labour (AMTSL). The present study was done to evaluate the practices of AMTSL.

Methods: 100 Case sheets of women who had vaginal delivery were randomly taken and analyzed for the data regarding the components of AMTSL. Microsoft excel was used for analysis.

Results: The main component of AMTSL, Oxytocin 10 IU IM was used in 80% of the cases for prevention of PPH. Methylergometrine was used in 20% of the cases. Documentation of controlled cord traction was not present. Uterine massage was not routinely done and documented.

Conclusions: WHO recommends all the components of AMTSL and uterotonic is the most significant component. Controlled cord traction should be used where trained person is available. It is necessary to train the staff and create awareness about the AMTSL. Correct documentation is essential for feedback and auditing. Methylergometrine should be used as a second line drug for the treatment of post-partum haemorrhage.

Keywords: Atonic PPH, AMTSL, Maternal mortality, Oxytocin

INTRODUCTION

Post-partum haemorrhage (PPH) is the most common cause of maternal mortality and accounts for 25% of all maternal deaths worldwide.¹ The most common cause of PPH is atonic PPH and majority of these deaths are preventable by adopting simple, effective, safe strategies such as active management of third stage of labour (AMTSL). Active management is superior to expectant management in reducing the blood loss. Routine use of AMTSL for all vaginal singleton births in health facilities is recommended by the International Federation of Gynecology and Obstetrics (FIGO), International Confederation of Midwives (ICM) and World Health organization (WHO). The components of AMTSL

according to FIGO-ICM includes use of a uterotonic immediately following delivery of the foetus, controlled cord traction and fundal massage immediately after delivery of the placenta.^{2,3} Revised guidelines by WHO in 2012 recommend palpation of the uterus every 15 minutes for 2 hours to assess the tone.⁴

METHODS

This study was done at a district level tertiary care hospital. A data collection form was prepared. 100 case sheets of women who had vaginal delivery were randomly taken and data was entered into the form and excel. Case sheets were analyzed for documentation of all the components of AMTSL according to FIGO was

performed or not. If any of the components were not documented, it was considered as not done.

RESULTS

There were 52% of unbooked and 48% booked cases. Primi were 18%, para 1 were 36%, para 2 were 32%, para 3 and more were 14%. Risk factors for PPH were, multiparity 46%, anaemia of moderate to severe grade was present in 25%, pre-eclampsia 10%, twins 2%, hydramnios 1% of cases (Table 1).

Table 1: General characteristics.

Variable	Percentage	
Booking status	Unbooked	52
	Booked	48
Parity	Primi	18
	Para 1	36
	Para 2	32
	≥Para 3	14
Risk factors	Multiparity	46
	Anaemia	25
	Preeclampsia	10
	Twins	2
	Hydramnios	1

Oxytocin 10 IU IM was given in 80% of cases. But this was documented in the doctors' notes in 50% of the cases only. The nurses' notes were also checked. The timing of uterotonic administration was not documented. IV infusion of oxytocin was given in 100% of cases. The dose varied 10-20 IU. In 20% of cases methyl ergometrine was used. Placental delivery by controlled cord traction was not documented. There was no documentation on fundal massage after delivery (Table 2).

Table 2: Components of AMTSL.

AMTSL components	Percentage (%)	
Uterotonic	Oxytocin IM bolus	80
	Oxytocin IV bolus	None
	Oxytocin IV infusion	100
	Methylergometrine	20
Controlled cord traction	Not documented	
Fundal massage	Not documented	

DISCUSSION

Globally haemorrhage contributed to 27% of maternal deaths between 2003-2009.⁵ Post-partum haemorrhage is the most common cause of death of women during childbirth in India with 38% of maternal deaths being attributed to PPH.⁶ It is estimated that primary PPH occurs immediately in 70% of cases and is due to uterine atony. The blood vessels pass through the myometrial

muscle cells and after delivery these muscle fibers contract effectively causing occlusion of the blood vessels. This is the primary mechanism of hemostasis after delivery. So atony of the uterus can cause massive PPH and death in spite of normal coagulation system. Two third of PPH cases occur in women with no identifiable risk factors.

Two trials (Bristol and Hinchingsbrooke) have demonstrated that active management of third stage of labour is superior to expectant management and prevents upto 60% of PPH.⁷⁻⁹ Active management when compared with expectant management, decreases incidence of PPH, length of third stage of labour, percentage of prolonged third stage of labour >30 minutes, need for blood transfusion and need for uterotonic drugs to manage PPH.

FIGO, ICM and WHO recommend AMTSL. In 2006, WHO recommended all the components of AMTSL. In a hospital setting it is possible to implement all the components of active management of third stage. But in places where skilled birth attendant or a trained person is not available, it is not possible to practice all the components of third stage of labour such as controlled cord traction.

One study has independently analyzed the effectiveness of the different components of the AMTSL. This study revealed that controlled cord traction reduced the risk of PPH by 50% where oxytocin was not given. Combined intramuscular oxytocin and controlled cord traction reduced PPH risk by 66%. Where only oxytocin was used, IV route was most effective in reducing the risk of PPH by 76% when compared with IM oxytocin.¹⁰

So in 2011, WHO conducted a multicenter, randomized controlled trial to compare simplified package (uterotonic without controlled cord traction) and full package (uterotonic with controlled cord traction).¹¹ This trial has shown that oxytocin 10 IU IM/IV without controlled cord traction (CCT) is not inferior than the full AMTSL package with regard to reducing blood loss ≥ 1000 mL in the third stage of labour. It was noted that CCT has minimal added value in terms of reducing blood loss over and above the uterotonic.¹⁶ Based on the findings of this trial, WHO revised the guidelines and recommends uterotonic universally and CCT as an optional component to be practiced where skilled birth attendant/trained person is available for delivery. Misoprostol 600 μ g orally is recommended in the absence of oxytocin.

Though FIGO recommends routine use of AMTSL, its practice is not uniform in hospitals. There is wide variation in practicing the different components of AMTSL. In one Egyptian hospital, third stage management practices were observed and it was found that third stage active management was correctly done in 15% of women observed.¹² In one WHO's facility based study of AMTSL in six countries where labour practices were directly observed in the third stage, it was reported

that 94% of the women observed were given oxytocin or another uterotonic. There was variation between the countries in the practices CCT, uterine massage and timing of uterotonic administration. It was also found that only 36% of the providers had received training in previous 3 years.¹³

A study done in 2005-2006 in seven countries reported that AMTSL was correctly implemented in only 0.5-32% of deliveries observed.¹⁴

In India a study was done in public health facilities in 4 districts where deliveries were observed for uterotonic drug usage practices. Uterotonic usage following delivery ranged from 78.6-99.1% across four districts. AMTSL according to Indian guidelines in the four districts was less than 10%.¹⁵

It is encouraging that uterotonic was used in almost all cases. However oxytocin was used in 80% of the cases only. Methyl ergometrine is associated with adverse effects such as nausea, vomiting, diarrhoea, coronary artery vasoconstriction and severe systemic hypertension. Hence it is no longer recommended to use for prevention of PPH and it should be used only as a second line drug for treatment of PPH. IV infusion of 20-40IU of oxytocin in 500 or 1000 mL of NS at 150 mL/hr is considered an acceptable alternative regimen which will help the uterus to remain retracted. The infusion was given in 100% of cases. The weakness of this study is that the practices were not observed directly. The timing of uterotonic administration was not documented. Even though placental delivery is commonly done by controlled cord traction, it was not documented. The documentation has to be improved and the components of AMTSL should be documented appropriately for review and audit purposes. The staff needs to be given feedback about accuracy and importance of documentation.

National health mission, Ministry of health and family welfare, government of India has issued guidelines in 2015 on prevention and treatment of PPH. The guideline strongly recommends the use of oxytocin along with 2 other steps, i.e CCT and uterine massage. A significant number of women still deliver in India in remote and peripheral areas where a skilled birth attendant usually is not available. To prevent PPH in those women who deliver at home, government of India prepared reference manual for advance distribution of misoprostol in the community by ASHA/ANM workers to distribute to women as misoprostol as it is effective, heat stable, feasible and safe. Misoprostol has been shown to be very effective in the prevention of PPH.

CONCLUSION

Dissemination of knowledge, training of providers, guidelines, and auditing would ensure widespread implementation of AMTSL and reduction in maternal mortality due to PPH. In low resource settings strategies

should be directed to implement routine use of simplified package (uterotonic without CCT) which has been proven very effective.

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