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International Journal of Advanced Nursing Education
Volume 3 Issue 2, 2023
ISSN- 25827383

Active Management of the Third Stage of Labor: New WHO Recommendations

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ABSTRACT

Background: Active management of the third stage of labor (AMTSL) portrays intercessions with the shared objective to forestall post pregnancy drain (PPH). In low-and middle-income nations, execution of AMTSL is hampered by lack of talented birth chaperons and a high level of home conveyances. Task moving of explicit AMTSL parts to untalented birth specialists or self-organization could be a system to expand admittance to possibly life-saving mediations. This study was intended to assess the impact, acknowledgment and security of undertaking moving of explicit parts of AMTSL to incompetent birth orderlies. Post pregnancy drain is a possibly dangerous, though preventable, condition that endures as a main source of maternal passing. It happens generally during the third phase of work, and AMTSL can forestall its event. AMTSL is a suggested series of steps, including the arrangement of uterotonic tranquilizes promptly upon fetal conveyance, controlled line foothold, and back rub of the uterine fundus, as evolved by the World Wellbeing Association. Here, we present current assessment and conventions for AMTSL.

Keywords: *Postpartum hemorrhage, active management of the third stage of labor, uterotonic agents*

INTRODUCTION AND DEFINITIONS

In early 2012, the World Health Organization (WHO) held a technical consultation to review global evidence related to the prevention and management of postpartum haemorrhage (PPH), which is still the most common cause of death for women during pregnancy. Starting around 2007, WHO suggestions have upheld dynamic administration of the third phase of work (AMTSL) as a basic intercession for PPH counteraction. AMTSL has turned into a focal part of the PPH decrease techniques of states all over the planet. Because of the 2012 gathering, WHO has given new proposals in regards to AMTSL, which can be utilized to fortify and concentrate the execution of this lifesaving mediation.

Postpartum hemorrhage (PPH) and blood loss complications constitute one of the most common causes of maternal mortality and morbidity. Its incidence is 11% globally among women in labor.[1-4] The third stage of labor (TSL) is characterized as the time between the conveyance of the child and the removal of the placenta. The span of the third stage is ~6-30 minute3-4. The pathophysiology of the TSL is as yet not completely perceived. During this stage, ejection of placenta with the arrangement of narrow drain after the introduction of the child is trailed by contracting of the placental surface with uterine compressions, lastly finishes with the release of the placenta from the uterus. Drain is limited with uterine compressions and actuation of the coagulation framework. As can be perceived from this definition, some level of drain generally happens at this stage (~100-250 cc). Restricting how much discharge to the base conceivable level is significant.

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Uterotonic agents

1) **Oxytocin:** Oxytocin is the most commonly used agent and the primary drug of choice in the TSL. Oxytocin's action is unique to the smooth muscles of the uterus; it increases the amplitude and frequency of contractions. Oxytocin binds to a G-protein on the surface of uterine myocytes, resulting in the generation of diacylglycerol (DAG) and inositol triphosphate (IP3) via the action of phospholipase C on phosphatidylinositol bisphosphate. DAG stimulates PG synthesis, and IP3 stimulates the release of calcium from the sarcoplasmic reticulum. It likewise enacts cyclooxygenase 2 by a further G-protein cooperation and, in doing as such, animates PG union. Oxytocin can be utilized soon after conveyance of the front shoulder of the child or removal of the placenta. By and large, its organization course and portion are 10 IU intramuscularly (IM). It can likewise be utilized intravenously (IV), which is ordinarily liked during cesarean segments (CS). A recently evolved oxytocin tablet has as of late been introduced that can be applied effectively by means of the sublingual course. An in vitro study showed a >30% decrease in tissue transepithelial electrical opposition after treatment with the oxytocin fast dissolving tablet, suggesting an expansion in the penetrability of the mucosal tissue to oxytocin5.

2) **Ergometrine (methergine):** Ergot alkaloids exert various effects throughout the body on at least three different types of receptor. They are non-selective 5-hydroxytryptamine 1 agonists and have affinities for dopamine and noradrenalin receptors. Ergot alkaloids are absorbed rapidly and completely after oral administration. Both are usually effective within 1-5 min after an IM injection. They are metabolized in the liver, and reported half-lives range from 0.5 to 2 h. Their actions on the uterus are probably a result of their agonist properties against adrenergic α-receptors; these receptors, when stimulated, lead to IP3 release and to calcium mobilization from the sarcoplasmic reticulum. To date, there is only one prospective study in the English literature on this topic. In that study, the authors compared the efficacy of rectal misoprostol 400 μg, oxytocin 10 IU injected IM, methylergometrine 0.2 mg injected IV, and 0.5 mg ergometrine +5 IU oxytocin injected IM in reducing blood loss in the TSL. They found that methylergometrine had the "best" uterotonic drug profile (lowest blood loss during the third stage and duration of the TSL). However, the study had several limitations. Most importantly, it was not a randomized study, the trial was not double-blinded, leading to the possibility of biased results, and no power calculation was reported[8]. Ergometrine causes continuous contraction of the uterus. There is not enough evidence about its use as a single agent. It is typically administered at 0.2 mg IM. Its use must be avoided in patients with hypertension.

3) **Syntometrine:** This contains 5 IU oxytocin and 0.5 mg ergometrine. The hour of beginning of the uterine reaction after IM organization is more limited than after ergometrine alone, and the term of activity is a few hours. In spite of the fact that it was viewed as more compelling than oxytocin in a survey, the unfriendly impact profile (hypertension, queasiness, regurgitating) limits its use9.

4) **Misoprostol:** This is a synthetic prostaglandin E1 derivative. It is an inexpensive drug and is stored readily. It does not cause high blood pressure and can be used in patients with asthma. Its most common adverse effect is flushing. Although the amount of blood loss has been shown to have been reduced with prophylactic use of misoprostol in many studies, it is not as effective as oxytocin. Thusly, oxytocin is the best option for the prophylaxis of PPH. In nations where the financial level is extremely low and home conveyances are normal, misoprostol can be utilized as the first-line drug; it tends to be

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ISSN- 25827383

utilized orally, rectally or sublingually. The course of organization and portion contrast from one country to another. The WHO and Global League of Gynecology and Obstetrics suggest a solitary portion of 600 µg misoprostol, oral or sublingual, for the prophylaxis of PPH.10-13

What Is New and Different about AMTSL in These Recommendations

AMTSL as a prophylactic intervention is composed of a package of three components or steps:
1) administration of a uterotonic, preferably oxytocin, immediately after birth of the baby;
2) controlled cord traction (CCT) to deliver the placenta; and
3) massage of the uterine fundus after the placenta is delivered.

In 2012, the consequences of an enormous WHO-coordinated, multi-focused clinical trial2 were distributed and showed that the main AMTSL part was the organization of an uterotonic.

The WHO preliminary likewise exhibited that the expansion of CCT did barely anything to diminish discharge. (By and large) than ladies who conveyed their placenta by their own work. There was a genuine contrast, be that as it may, regarding the length of the third stage: third stage was a normal of six minutes longer among those ladies who didn't get CCT. The creators recognized that this can be a significant measure of time, not such a great amount for the lady, however for the administration of occupied work and conveyance units.

Taking into account information from this preliminary and the current proof concerning the job of routine uterine back rub in the counteraction of PPH, the WHO gave new suggestions explaining that despite the fact that organization of an uterotonic stays vital to the execution of AMTSL, the exhibition of CCT and prompt fundal rub are discretionary parts.

Route of Administration for Uterotonic Agents
Although the standard doses of uterotonic agents are given above, the actual dose and administration forms differ in various countries. Table 1 lists four common international guidelines for dose and administration[14,15].

Drug doses and administration forms in four major international guidelines

	ACOG	RANZCOG	RCOG	SCOG
Oxytocin	10-40 IU IV or 10 IU IM	Not specified	5 IU IV (repeatable) or 40 IU IV 125 mL/h in 500 mL	10 IU IM or 5 IU IV or 40 IU IV 125 mL/h in 500 mL
Ergots	Metilergonavin 0.2 mg IM per 24 h period	Not specified	Ergometrin 0.5 mg IV or IM	Ergonovin 0.25 mg IV or IM every 2 h
Misoprostol	800-1000 µg rectal	1000 µg rectal	1000 µg rectal	400-1000 µg oral or rectal

Delivery of placenta with Controlled Cord Traction
Albeit this was suggested in the 2007 WHO rules, it is portrayed as discretionary for the dynamic administration of the third stage in the 2012 refreshed guidelines13. An unpracticed administrator might cause serious entanglements, like uterine reversal. In WHO studies, it

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ISSN- 25827383

was acknowledged as insufficient for diminishing blood misfortune. In any case, as per a meta-examination revealed in 2015, albeit the gamble of blood misfortune over 1000 mL was not diminished with controlled rope footing, the interim of the third stage, the mean blood misfortune (under 10 mL), and the gamble of blood misfortune under 500 mL were completely diminished. The creators noticed that controlled line footing actually had a spot in dynamic administration when performed by experienced faculty. It is likewise a suggested strategy for CSs.16,17

Uterine fundal massage after Placental Expulsion

Uterine fundal massage after placental expulsion gives uterine constrictions by animating endogenous prostaglandin discharge. This strategy was suggested in the 2007 WHO rules, and was depicted as discretionary for the dynamic administration of the third stage in the 2012 refreshed rules. Likewise, Chen et al. distributed consequences of an investigation of 2340 pregnancies, which showed that the expansion of fundal back rub to oxytocin didn't diminish PPH.

Possible adverse effects of Active Management

Adverse effects related to uterotonic agents
- Hypertension, nausea, vomiting due to ergot alkaloids
- Risk of placental retention
- Neonatal risks related to early cord clamping
- Iron-deficiency anemia
- Intraventricular hemorrhage

A Refocused Approach to Prevention of PPH Using AMTSL

***Uterotonic*:** Ensure that every woman is offered a uterotonic immediately after the delivery of the baby. Oxytocin is the preferred drug to prevent PPH.
***Delayed cord clamping*:** Delay clamping the cord for at least 1-3 minutes to reduce rates of infant anaemia.
***CCT*:** Perform CCT, if required.
***Postpartum vigilance*:** Immediately assess uterine tone to ensure a contracted uterus; continue to check every 15 minutes for 2 hours. If there is uterine atony, perform fundal massage and monitor more frequently.
Oxytocin quality and supply: Ensure a continuous supply of high-quality oxytocin. Maintain the cool chain for oxytocin, and remember that potency is reduced if oxytocin is exposed to heat for long periods.

Frequently Asked Questions about New AMTSL Recommendations

Does this imply that AMTSL is currently something else or ought to be called by another name?

No, it isn't important to change the name or contemplating AMTSL, since the primary parts have not changed and AMTSL is so generally comprehended and rehearsed. Such a change could bring about disarray that could dial back program development. All things being equal, as projects extend and work on the utilization of AMTSL, they ought to put more noteworthy accentuation on the main part, the organization of an uterotonic.

Should national policies regarding AMTSL now be changed?

Public strategies ought to keep on advancing AMTSL and guarantee that frameworks are set up to screen and track its execution. Strategies ought to help the act of AMTSL in all

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maternity offices of the wellbeing framework and by all units with birthing assistance abilities. Strategies ought to likewise coordinate the standard accessibility of excellent oxytocin and energize stockpiling of oxytocin in a cool climate.

Should preparing materials and pre-administration schooling programs be revised to mirror the new proposals?
Preparing and schooling projects ought to keep on preparing suppliers in every one of the components of AMTSL, since CCT and fundal rub stay significant strategies that suppliers might have to act in different circumstances, for instance, in the administration of held placenta or PPH coming about because of uterine atony. CCT diminishes the opportunity to the conveyance of the placenta, and in this way might be significant in occupied work wards or for a solitary supplier.

What does this mean for non-skilled providers?
As a result of the obvious proof that the organization of an uterotonic is the main part in AMTSL, services of wellbeing ought to set up strategies and projects to guarantee that each lady is offered an uterotonic following birth — whether she conveys in an office with a talented supplier or at home within the sight of a non-gifted supplier. This should be possible through the advancement of AMTSL in offices and the improvement of local area based programs for the utilization of misoprostol for ladies who convey at home. These sorts of endeavors can build inclusion to guarantee that near 100 percent of pregnant ladies are safeguarded from perilous PPH.

If we have a concern about the quality of oxytocin in our facilities, what should we do?
Oxytocin intensity crumbles when it is presented to temperatures more noteworthy than 30°C for delayed timeframes. Thus, oxytocin ought to be circulated and put away along a "cool chain." Oxytocin can be put away at room temperature in the work unit for restricted periods, as long as wellbeing supervisors regularly check and pivot stock and screen drug quality.

RESULTS
AMTSL has not changed. Instead, there is now a greater emphasis on the use of a uterotonic at every birth. According to the most recent Cochrane analysis, active management of the TSL decreases the risk of postpartum bleeding of over 1000 ml. The possible risks and benefits of active management must be explained to pregnant women and informed consent must be obtained. TA administration, as an extra drug for pregnant women whose TSL is being managed actively, decreases both the amount of blood loss and the incidence of PPH.

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