

Third Stage of Labour

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Preamble

Guidelines outline recommendations, informed by both the best available evidence and by midwifery philosophy, to guide midwives in specific practice situations and to support their process of informed decision-making with clients. The midwifery philosophy recognizes the client as the primary decision maker in all aspects of her care and respects the autonomy of the client (1).

The best evidence is helpful in assisting thoughtful management decisions and may be balanced by experiential knowledge and clinical judgment. It is not intended to demand unquestioning adherence to its doctrine as even the best evidence may be vulnerable to critique and interpretation.

The purpose of practice guidelines is to enhance clinical assessment and decision-making in a way that supports practitioners to offer a high standard of care. This is supported within a model of well-informed, shared decision-making with clients in order to achieve optimal clinical outcomes.

The Third Stage of Labour

The third stage of labour starts at the birth of the baby, and finishes with the expulsion of placenta and membranes, and bleeding is controlled. At the birth of the baby there is an oxytocin surge causing rapid contraction of the uterus resulting in a reduction in the size of the placenta as blood transfuses to the baby. At about half its original size the placenta detaches, and the 'living ligatures' of oblique muscle fibers contract around the maternal blood vessels to prevent excessive bleeding. There is also a temporary increase in the blood clotting mechanisms within the mother. Fifty percent of placentas deliver within five minutes and 90% within 15 minutes of the baby's birth (2). Magann et al (2005) concluded the risk of PPH increases after 10 minutes, and after 30 minutes the risk is six times normal. The uterus continues to contract after the birth of the placenta (3).

Gyte (2006) points out that although divided into stages, labour is more a continuum with each proceeding phase affecting what follows (4). Labour is controlled by a fine balance of neurological, hormonal, physiological and psychological interactions (5). This should be borne in mind when deciding on the management of the third stage of labour, and in the review of the evidence for active management.

Management Options

The third stage may be managed or physiological.

Physiological third stage:

After the birth of the baby the cord is left intact and the baby is held skin to skin by the mother and preferably breastfeeding. The normal stimulation of the nervous system and hormonal processes result in the separation of the placenta and the contraction of the uterus. The attendant should not pull or interfere with the cord. Physiological facilitation of the birth of the placenta is facilitated by the baby suckling, use of movement and gravity, maternal pushing efforts with contractions, empty bladder, good hydration and watchful waiting. This process may take up to an hour (6).

This process can be adversely affected by fear, immobility, dehydration, poor nutrition, exhaustion, separation of mom and baby and lack of emotional support. Any interference which delays the oxytocin surge and the maternal clotting systems may result in higher blood loss. Any interventions in labour may affect this process, including use of pharmaceuticals, operative vaginal birth, and traumatic birth such as shoulder dystocia (7).

Midwives should be clear about the components of physiological management in order to ensure safe practice (8). The RCM (2005) suggests that 'physiological third stage can be seen as the logical ending to a normal physiological labour' (9). It allows the physiological changes in the uterus to take their natural course (10).

With physiological management, a uterotonic (oxytocin), is usually not given unless uterine tone is poor (11).

Active management of third stage:

There are two commonly used methods to actively manage the third stage of labour.

1) The administration of an oxytocic after birth of the anterior shoulder, prompt clamping and cutting the cord and controlled cord traction with guarding of the uterus and fundal massage. (12).

2) Administration of an oxytocic within one minute of birth, clamping and cutting the cord with delaying for 1 to 3 minutes to help prevent anemia of the newborn, and use of controlled cord traction to deliver placenta, followed by fundal massage (13).

Active management has been shown to reduce the occurrence of postpartum hemorrhage by over 40%, with prophylactic treatment of 22 women to prevent one hemorrhage (14). It is the recommended course for all women by the SOGC, ICM and FIGO in all settings.

Trials of active management have consistently demonstrated reduction in PPH, both in the developing and developed world. However there is a wide range of methods used in these trials, and there are no trials distinctly differentiating between truly physiological birth and medicalised birth. There can be no assumption that these results would replicate in the low risk healthy homebirth population, or the low risk healthy hospital birthing women with whom Canadian midwives work.

Risk factors for PPH indicating active management

- Distended uterus, eg. Polyhydramnios, multiple pregnancy
- Uterine muscle exhaustion, eg. prolonged labour
- Intra amniotic fluid infection
- Uterine abnormalities eg. Fibroids
- Pre-existing blood clotting disorders eg. Von Willibrands
- Blood clotting disorders in pregnancy eg DIC associated with intrauterine death or APH
- Operative vaginal delivery
- Pre-eclampsia
- Previous history of PPH or retained placenta
- Induction/augmentation
- Precipitous labour
- Retained placenta longer than 15-30 minutes/parts of placenta, accretia, previa

Advantages and Disadvantages of active management

Therapeutic use of active management has made a major contribution to reducing maternal mortality and morbidity. There is debate as to whether prophylactic active management for all women is warranted, although current guidelines from SOGC advocate active management for all women.

- Likely less blood loss at birth but anecdotal evidence suggests that lochia after the immediate postpartum period may be more (15). Not clear in research whether this is clinically significant.
- Less anaemia <90 Hb but not indicated in the studies as to effect on women's day to day lives.
- Shorter third stage, mean of 4 minutes shorter, with fewer women having a third stage >40 minutes.
- When ergometrine is a component of management there is an increase of adverse effects such as

headache, nausea and increase in blood pressure (16). However the use of ergometrine for active management is not routine in BC.

- Larger heavier placenta – this may be overcome by unclamping the cord and allowing it to drain.
- More chance of rhesus iso-immunization in Rh neg women with early cord clamping, due to back-flow from the cord into the maternal circulation.
- Rarely, snapping of the cord and inversion of the uterus are side effects of active third stage (17).
- There are no direct benefits to the baby from active management (except for prevention of PPH in mother).

Early clamping of the cord may contribute to breathing difficulties in babies, especially if premature. There is a lower hemoglobin in early cord clamping, with lower iron stores shown in some studies at 3-6 months (18).

Decisions on management

The woman must at all times be given the information she needs to help make decisions on management options.

It is reasonable to offer physiological management to women who have had physiological labours provided she is fully informed of the risks and benefits and elects to have physiological management. However it is extremely important that the midwife is competent in physiological management and is able to support the woman in a watchful and patient manner, utilizing normal physiological methods to assist in the birth of the placenta such as nursing, mobilization, empty bladder, calm, warmth and confident support.

It is important not to 'mix' methods, and if the midwife feels she needs to assist in the third stage then full active management should be chosen. It has been shown that controlled cord traction without oxytocin for example will increase the risk of hemorrhage. There is inconclusive evidence on the safety or effectiveness of taking only one or two components of active management. A major difference was found between physicians and midwives in the management of third stage. Physicians routinely implemented active management of the third stage of labor; while midwives preferred expectant approaches, principally based on women's preference. Provincial data did not show differences in postpartum hemorrhage or transfusion rates by practitioner type.

Current practice guidelines of third stage management recommend active management of third stage, as a recent study found 98.7% of BC midwives polled are aware. Of these 82 midwives in the study, 51.2% agree with this practice guideline recommendation, and 17% agreeing that "routine active management of third stage should be the norm." Response rates indicating that "oxytocin should be given with the anterior shoulder" were the following: obstetricians 71.1%, family physicians 68.3% and midwives 26.7%. It seems reasonable to delay the active management of third stage for one minute after delivery of the baby to maximize the benefit to the baby of increased placenta-to-baby transfusion.

Any intervention has the potential to interfere with the hormonal, neurological and psychological aspects for a safe third stage, and therefore women should be advised that in certain circumstances it may be necessary to change plans to an active management of third stage.

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