The Royal College of Midwives

Evidence Based Guidelines *for Midwifery-Led Care in Labour*

Third Stage of Labour

Practice Points

Midwives should be competent in both active management and physiological management.

Active management involves giving a prophylactic uterotonic, cord clamping and controlled cord traction (Begley et al. 2011).

Physiological management involves no administration of a prophylactic uterotonic, no clamping and cutting the cord until the placenta is delivered and promoting the use of gravity to assist delivery of the placenta in a timely manner with maternal effort (Begley et al. 2011).

Skin to skin contact and early breast feeding may facilitate the delivery of the placenta (Begley et al. 2011; Marin et al. 2010; Fahy et al. 2009; Mercer et al. 2007).

Reducing the duration of the third stage through proactively encouraging women to adopt an upright position shortly after birth may assist in reducing blood loss without the necessity of resorting to uterotonics and cord traction (Cohain 2010; Hastie and Fahy 2009).

Delayed cord clamping is currently the recommended practice known to benefit the neonate in improving iron status up to six months but with a possible risk of jaundice that requires phototherapy (Resuscitation Council 2010; McDonald and Middleton 2009; WHO 2007; Mercer et al. 2007).

'Benefits and harms' of both physiological and active management of third stage of labour have been identified (Begley et al. 2011) and midwives need to be aware of these when discussing management choice with women and applying clinical decision making.

When physiological management is offered to women as a reasonable option, many will choose it (Rogers and Wood 1999). Physiological management can be seen as the logical ending to a normal physiological labour (Soltani 2008; RCM 1997).

Women at low risk of postpartum haemorrhage who request physiological management of the third stage should be supported in their choice (NICE 2007).

If physiological management is attempted but intervention is subsequently required, then management must proceed actively. If the placenta is retained after one hour, active management should be considered (NICE 2007; Prendeville et al.1988).

Third Stage of Labour

It is accepted that there are some definitions of third stage of labour which are universal:

- The third stage of labour is that period of time from the birth of a baby to expulsion of the placenta and membranes (Begley et al. 2011).
- Management of the third stage of labour is the process by which expulsion of the placenta and membranes is achieved (Harris 2005).

However, the definitions of two methods in management of the third stage are still debated in the literature and in practice (Oladapo 2010; Fahy 2009; Soltani 2008; Harris 2005). In practice approaches to management are normally categorised into two types; active management and physiological management (sometimes called expectant management). There is significant practice variation in their implementation (Harris 2005). Active management remains dominant in the United Kingdom among midwives and obstetricians (Farrar et al. 2010).

Active management has been defined as the the administration of a prophylactic uterotonic drug around the time of the baby's birth, clamping and cutting of the umbilical cord and controlled cord traction to expedite delivery of the placenta and membranes (Begley et al. 2011; NICE 2007; Rogers et al. 1998).

The Cochrane review exploring the effect of timing of umbilical cord clamping showed both benefits and harms for late cord clamping (McDonald and Middleton 2009). Immediate cord clamping was associated with reduced placental transfusion and lowered infant haemoglobin. Following birth, there was was a significant increase in infants needing phototherapy for jaundice accompanied by an increase in infant haemoglobin levels and serum ferritin levels in the first few months of life, in the late clamping group (McDonald and Middleton 2009). In response to this evidence, guideline recommendations have been amended to include delayed cord clamping (Resuscitation Council 2011; RCOG 2009; WHO 2007). The timing of cord clamping needs to be determined in the clinical context. It is estimated that this normally would be around three minutes. The RCOG opinion paper (2009b) reviewing the evidence, concluded there was a need for large trials in this area.

Physiological management involves no prophylactic uterotonic drug administration, no cord clamping until after the placenta has been delivered and no cord traction (Begley et al. 2011; Rogers et al.1998).

Applying active management principles in physiological management (palpating the uterus, and/or applying cord traction) may lead to increased bleeding (Begley 2011). Variations in PPH rates have been identified (Lu et al. 2005) and linked to level of practitioner expertise in third stage care (Goudar et al. 2008) and management style (Logue 1990). The last author concluded that when managing the third stage, more conservative and patient practictioners have lower PPH rates than the 'impatient and heavy-handed'.

The recent Cochrane review comparing active and physiological management (Begley at al. 2011) concluded that for 'all' the women in the studies (those at low and high risk of bleeding), active management reduced severe bleeding and anaemia, but increased blood pressure, after pains, nausea, vomiting and use of medication for pain relief in the postnatal period. The number of women readmitted to hospital with vaginal bleeding was increased and there was a reduction in the birth weight of the newborn. This lower birth weight was attributed to the loss of up to 80 mls of infant blood retained in the placenta due to early cord clamping (Farrar et al. 2009). The analysis of the women categorised as low risk, had similar findings, though there was no statistically significant difference in the risk of severe bleeding (>1000 ml) between the two management approaches. It is suggested that in the developed world, a woman can cope with a blood loss up to 1000 ml without coming to serious harm (RCOG 2009).

Begley et al. (2011) identify 'benefits and harms' in both managements of the third stage and recommend further research to identify the advantages and disadvantages of individual components of third stage management to see if benefits can be achieved with a reduction in harm.

There has been considerable critique of the trials included in the Begley at al. (2011) review. Gyte (1994) previously pointed to the fact that several of the trials used "piecemeal" approaches to the management of the third stage. In one of the trials (Prendiville et al. 1988), 53% of the women allocated to physiological management actually received some component of active management. An interim analysis of this trial showed that a disproportionate number of haemorrhages seemed to have occurred in cases in which physiological management, though randomly allocated, was not possible (Prendiville et al. 1988). The trials in the review took place in units where active management was routine. Begley et al. (2011) also highlight variation between trials in the management protocols used. There was a high level of mixed management approaches in those allocated physiological management within studies.

Lack of midwifery expertise in physiological management could clearly have impacted on the results (Begley 2011; Gyte 1994). Active management dominated in midwifery practice at the time when many of these studies were undertaken and midwives could have applied active management principles to physiological management, which requires a hands off and watchful waiting approach. Such a mixed approach could partially account for the increased blood loss seen in the studies, as intervening in physiological management is associated with increased bleeding (Begley et al. 2011).

Wickham (1999) has raised additional questions about the total amount of blood lost related to different methods of care in third stage, and wonders whether women who receive active management may be experiencing greater blood loss overall due to heavy lochia in the hours after birth (1999). She has also suggested that active management merely delays blood loss until it is less likely to be observed (Wickham 2003).

The inability to blind women and midwives to the management approach allocated may have led to bias in the reporting of some outcomes, paticularly blood loss (Begley 2011). The component of third stage management which reduces blood loss has not been identified.

The RCT by Kashanian et al. (2008) was excluded from the Cochrane review due to the high rate of women excluded after randomisation. This study found that active management had no significant effect on the amount of blood loss. This clearly highlights the need for further studies.

Fahy et al. (2010) conducted a retrospective cohort study comparing active management with physiological management in a tertiary maternity unit and a midwife led unit in New South Wales, Australia. Intention to treat analysis revealed an increased postpartum haemorrhage rate for active management compared to the physiological approach (8.6% versus 1.2% between 500-1000 ml loss). They describe physiological management as an holistic approach which also includes skin to skin contact, self-attachment breast feeding and encouraging an upright posture for delivery of the placenta (Hastie and Fahy et al. 2009). Skin to skin contact has been shown to reduce the length of the third stage (Marin et al. 2010) and other authors have proposed that reducing the duration of the third stage may be the key indicator in reducing the risk of post partum haemorrhage (Magann et al. 2005). No studies have compared this type of physiological management with active management.

Cohain (2010) has also suggested an alternative approach to third stage management, which incorporates some of the elements Hastie and Fahy (2009) describe when undertaking physiological management; focussing on the woman being upright by 4 minutes to deliver the placenta without assistance. Reducing the duration of the third stage through proactively encouraging women to adopt an upright position shortly after birth may assist in reducing blood loss without the necessity of resorting to uterotonics and cord traction to do so.

The critique of study findings creates a dilemma for midwives in practice. Harris (2005) comments that comparative studies have failed to acknowledge the complexity of third stage practice and need to be re-evaluated within this context. As Soltani (2008) suggests, the use of evidence on the management of the third stage is an example of a muddled approach to the interpretation and application of evidence.

In addition, there is evidence to suggest that active management does have an iatrogenic effect whereas the effect of doing nothing does not, for low risk women who can accommodate the increased blood loss (RCOG 2009a; Mercer et al. 2007). As Soltani (2008) suggests, routine active mangement with the specific aim of reducing blood loss is questionable in countries where women enjoy good health and nutrition. This challenges the appropriateness of practice that is responding to statistically significant outcomes as opposed to clinically significant outcomes. Incorporating skin to skin contact, early breast feeding and upright posture may also expedite expulsion of the placenta and reduce the length of the third stage and subsequently the amount of blood loss. Sharing such information with women will allow them to make an informed choice about the management option they wish to choose.

Rogers et al. (2011), responding to concerns among midwives about a perceived increase in postpartum haemorrhage and blood transfusion rates following the move to using Syntocinon 10 international units by intramuscular injection for routine use in active management in accordance with NICE guidance (2007), undertook a retrospective comparative study using maternity data collected in 2008 and 2010. They found an increase in estimated blood loss above 1000mls but no statistically significant increase in blood transfusion rates. The authors state that their results do not provide enough evidence to revert to using Syntometrine, contrary to the recommendations of the Centre for Maternal and Child Enquiries (CEMACE) (2011). However, along with others (McDonald et al. 2009), they highlight the need for further investigation into the use of the most appropriate oxytocic, when active management is required.

References

Begley CM, Gyte GML, Murphy DJ, et al. (2011) Active versus expectant management for women in the third stage of labour. *Cochrane Database of Systematic Reviews,* Issue 11. Chichester: John Wiley and Sons

Cohain JS (2010) Towards a physiological management of the third stage that prevents postpartum haemorrhage. *MIDIRS Midwifery Digest* **20**(3): 348-351

Fahy K, Hastie C, Bisits A, et al. (2010) Holistic physiological care compared with active management of the third stage of labour for women at low risk of postpartum haemorrhage: a cohort study. *Women and Birth* **23**(4): 146-152

Fahy KM (2009) Third stage of labour care for women at low risk of postpartum haemorrhage. *Journal of Midwifery and Women's Health* **54**(5): 380-386

Farrar D, Airey R, Tufnell D, et al. (2009) Measuring placental transfusion for term births: weighing babies with the cord intact. *Arch Dis Child Fetal Neonatal Ed* **94**(7)

Farrar D, Tuffnell D, Airey R, Duley L (2010) Care during the third stage of labour: a postal survey of UK midwives and obstetricians. *BMC Pregnancy and Childbirth* **10**(23)

Goudar SS, Chakraborty H, Edlavitch SA, et al. (2008) Variation in the postpartum hemorrhage rate in a clinical trial of oral misoprostol. *Journal of Maternal-Fetal and Neonatal Medicine* **21**(8): 559-64.

Gyte G (1994) Evaluation of the meta-analyses on the effects on both mother and baby, of the various components of 'active' of the third stage of labour. *Midwifery* **10**(4): 183-199

Harris T (2011) Care in the third stage of labour. In:Macdonald S and Magill-Cuerden J (Eds) *Mayes' Midwifery.* London: Bailliere Tindall Elsevier

Harris T (2005) Midwifery practice in the third stage of labour. PhD Thesis. Leicester: De Montfort University

Hastie C and Fahy KM (2009) Optimising psychophysiology in the third stage of labour: theory applied to practice. *Women and Birth* **22**(3): 89-96

Kashanian M, Fekrat M, Masoomi Z, et al. (2010) Comparison of active and expectant management on the duration of the third stage of labour and the amount of blood loss during the third and fourth stages of labour: a randomized controlled trial. *Midwifery* **26**(2): 241-245

Logue, M. (1990). Management of the third stage of labour A midwife's view. *Obstetrics and Gynaecology* **10**(suppl 2): S10-S12.

Lu MC, Fridman M, Korst LM, et al. (2005). Variations in the incidence of postpartum hemorrhage across hospitals in California. *Maternal Child Health Journal* **9**(3): 297-306.

Magann EF, Evans S, Chauhan SP et al. (2005). The length of the third stage of labor and the risk of postpartum hemorrhage. *Obstetrics and Gynecology* **105**(2): 290-293

Marin GMA, LLana MI, Lopez EA, et al. (2010) Randomizd controlled trial of early skin-to-skin contact: effects on the mother and the newborn. A*cta Paediatrica* **99**(11): 1630-4

McDonald SJ, Middleton P (2009) Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes. *Cochrane Database of Systematic Reviews,* Issue 2. Chichester: John Wiley and Sons

MercerJS, Erickson-Owens DA, et al. (2007). Evidence-based practices for the fetal to newborn transition. *Journal of Midwifery and Womens Health* **52**(3): 262-272

National Institute of Clinical Excellence (NICE) (2007) Intrapartum Care: care of healthy women and their babies. London: NICE

Oladapo OT (2010) What exactly is Active Management of third stage of labor? *Acta Obstetricia et Gynecologica Scandinavica* **89**(1): 4-6

Prendiville, WJ, Elbourne D, et al. (2004). Active versus expectant management in the third stage of labour. *Cochrane Database of Systematic Reviews,* Issue 1. Chichester: John Wiley and Sons

Prendiville WJ, Harding JE, Elbourne DR et al.(1988) The Bristol third stage trial: active versus physiological management of the third stage of labour. *British Medical Journal* **297**(6659): 1295-1300

Resuscitation Council (UK) (2011), *Newborn life support: Resuscitation at birth.* 3rd edition. London: Resuscitation Council.

The Royal College of Midwives (1997) Debating Midwifery: Normality in Midwifery London: RCM

Royal College of Obstetricians and Gynaecologists (2009a) Prevention and Management of Postpartum Haemorrhage. http://www.rcog.org.uk/womens-health/clinical-guidance/prevention-and-management-postpartum-haemorrhage-green-top-52 Accessed 13 th November 2011

Royal College of Obstetricians and Gynaecologists (2009b) Clamping of the umbilical cored and placental transfusion. http://www.rcog.org.uk/files/rcog-corp/uploaded-files/SACPaper14ClampingUmbilicalCord09.pdf Accessed 13th November 2011

Rogers J, Wood J, McCandlish R, Ayers S, Truesdale A, Elbourne D (1998) Active versus expectant management of third stage of labour: the Hinchinbrook randomised controlled trial. *Lancet* **351**(9104): 693-9

Rogers J and Wood J (1999) The Hinchinbrooke Third stage trial, what are the implications for practice? *Practising Midwife* **2**(2): 35-37

Rogers C, Villar R, Pisal P et al.(2011) Effects of Syntocinon use in active management of third stage of labour. *British Journal of Midwifery* **19**(6): 371-378

Soltani, H (2008). Global implications of evidence 'biased' practice: management of the third stage of labour. *Midwifery* **24**(2): 138-142.

Wickham S (2003) Further thoughts on the third stage. In: Wickham S (ed) Midwifery Best Practice. Edinburgh: Books for Midwives Press

WHO (2007) Recommendations for the prevention of postpartum haemorrhage.http://www.who.int/making_pregnancy_safer/publications/WHORecommendationsforPPHaemorrhage.pdf Accessed 13th November 2011

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The guidelines have been developed under the auspices of the RCM Guideline Advisory Group with final approval by the Director of Learning Research and Practice Development, Professional Midwifery Lead.

The guideline review process will commence in 2016 unless evidence requires earlier review.

Appendix A

Sources

The following electronic databases were searched: The Cochrane Database of Systematic Reviews, MEDLINE, Embase and MIDIRS. As this document is an update of research previously carried out, the publication time period was restricted to 2008 to March 2011. The search was undertaken by Mary Dharmachandran, Project Librarian (RCM Collection), The Royal College of Obstetricians and Gynaecologists.

Search Terms

Separate search strategies were developed for each section of the review. Initial search terms for each discrete area were identified by the authors. For each search, a combination of MeSH and keyword (free text) terms was used.

Journals hand-searched by the authors were as follows:

- Birth
- British Journal of Midwifery
- Midwifery
- Practising Midwife
- Evidence-based Midwifery