

Medicine: paramedics and obstetrics essay

[Business](#), [Management](#)



Introduction

Body-Literature Review

- The importance use of oxytocin use in obstetrics
- The importance of Oxytocin use in postpartum haemorrhage
- Oxytocin use by paramedics
- Summary

Conclusions

Recommendations

Abstract

This document embraces a literature review research into the feasibility of oxytocin for the management of postpartum haemorrhage in the pre-hospital setting. Scientists have discovered that oxytocin has shown to have reduced the risk of postpartum haemorrhage yet only some ambulance services are equipped with the drug. This discussion explores reasons for paramedic professionals electing not to have oxytocin in their execution units and ultimately make recommendations based on these findings.

Critically analyse and discuss the use and feasibility of oxytocin

for the management of postpartum haemorrhage in the pre-hospital setting.

Introduction

While oxytocin is useful as a pharmaceutical intervention for post-partum haemorrhage in hospital settings; the pre-hospital situation is different. This drug is not kept on the paramedic unit (kits) neither administered outside of hospital settings when patients are being transported. It is the author's

intention to investigate underlying reasons for this practice. Two questions surface while contemplating this phenomenon. They are; is the pre-hospital administration of oxytocin beyond the professional jurisdiction of a paramedic? If so why?

There is limited research in pre- hospital oxytocin use, but this does not mean that it must be omitted from paramedic practice when administration of this effective anti-hemorrhagic medication can reduce blood loss and save a woman's life while being transported to hospital. While the drug may be restricted to obstetric/gynecological practice paramedics on many occasions are forced to conduct deliveries in the process of transporting mothers to hospital who enter the second stage of labor. Post-partum haemorrhage is an emergency (Jangsten et. al, 2011).

Besides, after delivery of the third stage oxytocin is mandatory for contracting the uterus and limit bleeding. Depending on the distance away from a hospital this emergency occurs, oxytocin would be mandatory to contract the uterus and control bleeding after delivery of the placenta has occurred (Jangsten et. al, 2011).

A study conducted by Verdile, Tutsock, Paris and Kennedy (1995) regarding ' Out-of-hospital deliveries: a five-year experience' revealed that between 1984 to1988; 62, 000 calls from an urban district related to obstetric emergencies were answered by paramedics. Eighty one out of hospital deliveries were conducted by paramedics during the period being reviewed. ' Maternal complications included 4 patients hypertensive with delivery; 9 had some degree of vaginal bleeding and in 33 patients, the pre-hospital providers did not deliver the placenta in the field. An EMS physician was in

attendance for only two of the out-of-hospital deliveries' (Verdile et. al. 1995, p. 11).

In the discussion researchers noted that as it pertained to the urban EMS system being reviewed, ' out-of-hospital deliveries, especially pre-term deliveries, are a common event' (Verdile et. al. 1995, p. 11). Therefore, in concluding the researchers advanced that ' emergency medical service systems and medical directors should have in place continuing educational programs, patient-care protocols, and continuous quality improvement measures to evaluate the care rendered to patients having out-of-hospital deliveries'(Verdile et. al. 1995, p. 11).

This study was conducted more than a decade ago. Even though there has been no serious complications requiring oxytocin administration intervention for post-partum haemorrhage emergency, it was noted that the third stage/placenta was not delivered by paramedics. Could it be that because oxytocin administration is mandatory during the third stage this action was omitted? However, delayed delivery of the third stage is also dangerous. As such, twenty-first century paramedics pre-hospital delivery practice ought to include adequate third stage management also and oxytocin administration by paramedics researched thoroughly before fatal outcomes become manifest (Verdile et. al. 1995, p. 11).

Body-Literature Review

The importance of oxytocin use in obstetrics

Krening, Rehling-Anthony and Garko (2012) have conducted studies to provide evidence supportive of Oxytocin Administration: The Transition to a Safer Model of Care. These researchers described through a collaborative

Perinatal Clinical Nurse Specialists and Obstetric Nurse Educators program designed for a 9-hospital healthcare system in Colorado that they underwent a system-wide process-improvement project. The aim was to improve pregnant women's safety after receiving oxytocin. Essentially, the underlying initiative focused on decreasing 'risk exposure by successfully implementing a standardized evidence-based protocol and processes across the healthcare system' (Krening et. al, 2012, p. 17).

Standardized oxytocin mixtures administration were implemented; also low-dose guidelines offered to be given, and safety checklists developed ensuring stable fetal and maternal health before initiation of the drug and increases in dosages. Outcomes revealed that there were 'shorter lengths of labor, decreased incidence of tachysystole, and decreased incidence of primary cesarean birth (Krening et. al, 2012, p. 17). While these researchers did not deliberate on the use of oxytocin during post-partum haemorrhage this evidence shows the significance of oxytocin in obstetric interventions (Krening et. al, 2012).

Incidentally, Buchanan, Patterson, Roberts, Morris and Ford (2012) from the University of Sydney Australia examined Trends and morbidity associated with oxytocin use in labour in nulliparas at term. Researchers aimed at evaluating patterns of oxytocin use drawing a sample from a population in New South Wales, Australia in determining maternal and neonatal morbidities linked to use of the drug within the specific population (Buchanan et. al, 2012).

Between 1998 and 2008 a sample of nulliparas to term New South Wales women with a singleton, cephalic fetus were assessed for their response to

oxytocin use during labour. The team concluded that while oxytocin is important in the management of labour its use ought to be carefully monitored through standardization which will ultimately limit maternal and neonatal morbidity (Buchanan et. al, 2012).

The importance of Oxytocin use in postpartum haemorrhage

Precisely, in relation to oxytocin use in post-partum haemorrhage for which this essay is concerned McDonald, Prendiville and Elbourne (2004) conducted a comparative analysis related to the use of syntometrine and oxytocin in limiting post-partum haemorrhage when used to aid delivery of the placenta (third stage). In conducting this evaluation the researchers utilized resources of the Cochrane Pregnancy and Childbirth Group trials register. Conclusions revealed that there were significant reductions in blood loss when the drugs were combined indicating that they both contributed to overall decrease in post-partum haemorrhage (Buchanan et. al, 2012). Meanwhile Family Physicians Janice Anderson and Duncan Etches (2007) have proposed evidence showing whereby active primary post-partum haemorrhage requires management involving the administration of a uterotonic drug. This must be given soon after delivery of the anterior shoulder. A combination of controlled cord traction, along with early cord cutting and clamping is believed to decrease the risk of postpartum hemorrhage and significantly reduces lengthy third stage of labor. According to these physicians incidences of retained placenta are remote when these measures are taken in the third stage. When compared to non-administration of oxytocin whereby the placenta is allowed to separate

spontaneously through gravity or nipple stimulation primary post partum is decreased by 68 percent (Anderson & Etches, 2007).

Oxytocin use by paramedics

Samuel McCreesh (2012) conducted a literature review pertaining to paramedics' management of third stage of labor in the UK. It was revealed that in that country ambulance service guidelines were currently designed based on a physiological management of the third stage of labour, so in the absence of a midwife, paramedics cannot actively manage the third stage. Hence this excluded paramedics from intervening in third stage delivery procedures. However, in the United Kingdom paramedic training has evolved towards a higher education application through university programmes (McCreesh, 2012).

The researcher discovered that while undergraduate paramedic students are exposed to additional training regarding management of obstetric emergencies, specific therapeutic interventions related to third stage and post-partum haemorrhage was not included in the curriculum. Current clinical practice does not permit paramedics to use oxytocin. Consequently, it was recommended that paramedic training adopt more active third stage of labor management since primary post-partum is a risk which needs to be reduced at all cost. Additionally, the researcher questions the effectiveness of present paramedic practice in responding to primary postpartum haemorrhage in a pre-hospital setting, if there is no midwife on the scene (McCreesh, 2012).

Further, Gayle McLelland, Ameer Morgans and Lisa McKenna (2013) conducted a review into the involvement of emergency medical services at

unplanned births before arrival to hospital. The objective encompassed addressing concerns paramedic practice regarding births before arrival (BBAs) since they are the first respondents in any emergency. The review aims at highlighting paramedics' role being not limited only to transferring birthing women, but also the necessity for them to apply critical clinical decision-making skills during their practice. The authors recommend that strategies supportive of paramedics out-of-hospital management of obstetric emergencies (McLelland et. al, 2013).

After perusal of databases 18 studies were selected for this review. Eight articles offered evidence showing that the most frequent maternal complication was primary post-partum bleeding and nine studies revealed hypothermia as being the most common neonatal complication irrespective of the gestation age (McLelland et. al, 2013).

Conclusions emerging from this review were that paramedics ought to be more equipped educationally to manage born, before arrival (BBA) cases at both undergraduate and graduate levels. ' Protocols should be developed between health and ambulance services to minimize risks associated with BBAs (McLelland et. al, 2013, p. 1). Precisely, the authors contend that there is tremendous evidence supportive BBAs attended and managed by paramedics predicting that the time for thorough investigation into the role of paramedics in pre-hospital delivery intervention be undertaken (McLelland et. al, 2013, p. 1).

Summary

The foregoing literature review encompassed a critical analysis discussing the use and feasibility of oxytocin for management of postpartum

haemorrhage in pre-hospital settings. When the importance of oxytocin use in obstetrics was examined it was confirmed that while oxytocin is important in the management of labour its use ought to be carefully monitored through standardization, which will ultimately limit maternal and neonatal morbidity (Buchanan et. al, 2012).

In relation to the importance of oxytocin use in postpartum haemorrhage clearly evidence supports the mandatory use of oxytocin for safe delivery of the placenta and reduction of primary post-partum haemorrhage during the third stage. Family physicians Janice Anderson and Duncan Etches (2007) reiterated that primary post-partum haemorrhage requires management involving the administration of an uterotonic drug. This must be given soon after delivery of the anterior shoulder. A combination of controlled cord traction, along with early cord cutting and clamping is believed to decrease the risk of postpartum hemorrhage and significantly reduces lengthy third stage of labor (Anderson & Etches, 2007).

However, in the presence of limited data pertaining to paramedics' use of oxytocin Gayle McLelland, Ameer Morgans and Lisa McKenna (2013) review revealed that that paramedics ought to be more equipped educationally to manage born, before arrival (BBA) cases at both undergraduate and graduate levels. ' Protocols should be developed between health and ambulance services to minimize risks associated with BBAs (McLelland et. al, 2013, p. 1).

Obviously, this was in support of Samuel McCreesh's (2012) literature review, which revealed that in the United Kingdom ambulance service guidelines were currently designed based on a physiological management of

the third stage of labour, so in the absence of a midwife, paramedics cannot actively manage the third stage. Hence, this excluded paramedics from intervening in third stage delivery procedures. However, even though in the United Kingdom paramedic training has evolved towards a higher education application through university programmes this omission has not been addressed (McCreesh, 2012). Precisely, this makes the use and feasibility of oxytocin for management of postpartum haemorrhage in pre-hospital settings obscure.

Conclusions

In introducing this topic a study conducted between 1984 and 1998 by Verdile, Tutsock, Paris and Kennedy (1995) was referenced. It was noted that while paramedics answered many obstetric emergencies involving deliveries with post-partum haemorrhage consequences the 'pre-hospital providers did not deliver the placenta in the field. An EMS physician was in attendance for only two of the out-of-hospital deliveries' (Verdile et. al. 1995, p. 11).

Therefore, in considering the use and feasibility of oxytocin for management of postpartum haemorrhage in pre-hospital settings the question why in this study paramedics did not deliver the third stage in the field ought to be answered. If this is beyond paramedics practice then there is obviously no need for them to use oxytocin. Further, a review of the Peoria Area EMS System EMT Paramedic Training Program Clinical Instruction Plan: Labor and Delivery outlines scope of practice, which reads:

'A student enrolled in an IDPH approved EMT-P program, while fulfilling the clinical training and in-field supervised experience requirements mandated for licensure or approval by the system and the Department, may perform

prescribed procedures under the direct supervision of a physician licensed to practice medicine in all of its branches, a qualified registered professional nurse or a qualified EMT, only when authorized by the EMS medical director (EMS Act Section 3. 55(d); EMS Rules Section 515. 550 (d)' (Peoria Area EMS System, 2013).

While this protocol pertains towards training it would appear from the foregoing literature review that paramedics scope of practice does not permit them to function beyond transporting a born before arrival (BBA) to hospital. However, this literature review also revealed that primary postpartum haemorrhage is a common complication of born before arrival (BBA) deliveries, which occur in a pre-hospital setting (McLelland et. al, 2013).

Recommendations

This literature review extensively recommended that paramedics being the first respondents in any emergency be adequately equipped with skills to treat postpartum haemorrhage, which is an obstetric emergency. A major intervention in treatment of this condition according to Family Physicians Janice Anderson and Duncan Etches (2007) is administering oxytocin.

Clearly, the current paramedic curriculum, licensure or scope of practice in most countries does not allow paramedics to function at this level.

Reiterating that there ought to be some improvement in paramedics' practice related to the use and feasibility of oxytocin intervention for management of postpartum haemorrhage in pre-hospital settings must be matched with policy changes. This would entail emergency management policy makers across the world designing a more realistic scope of practice for this category of health care workers.

A twenty-first century development shows that more mothers are utilizing hospitals and birthing centers for deliveries. However, emergencies are inevitable. Misjudgments occur and paramedics often are caught at the junction between transporting a mother in labor to hospital and delivery of an infant. The third stage delivery is also a crucial aspect of labor. Is it ethical to allow a mother to spontaneously deliver the placenta while awaiting arrival at hospital? There is a specific time for which third stage ends to prevent primary post-partum haemorrhage. Paramedics ought to be trained to do this through administering oxytocin which facilitates then process.

References

- Anderson, J., & Duncan Etches, D. (2007). Prevention and Management of Postpartum Hemorrhage. *Am Fam Physician*, 75(6), 875-882.
- Buchanan, S. Patterson, J. Roberts, C. Morris, J., & Ford, J. (2012). Trends and morbidity associated with oxytocin use in labour in nulliparas at term. *Aust N Z J Obstet Gynaecol*. 52(2): 173-8
- Jangsten, E. Mattsson, L. Lyckestam, I., & Hellström, A. (2011). A comparison of active management and expectant management of the third stage of labour: A Swedish randomised controlled trial. *BJOG: an International Journal of Obstetrics & Gynaecology*,

118 (3), 362-9.

Krening, C. Rehling-Anthony, K., & Garko, C. (2012). Oxytocin Administration:

The Transition to a Safer Model of Care. *Journal of Perinatal and Neonatal Nursing*,

26(1), 16-24

McCreesh, S. (2012). Reducing the Risk of Postpartum Haemorrhage in paramedic Practice.

McDonald , S. Prendiville, W., & Elbourne, D. (2004). Prophylactic syntometrine versus

oxytocin for delivery of the placenta. *Women and Infants Research Foundation*, King

Edward Memorial Hospital

McLelland, G. Ameer Morgans, A., & McKenna, L. (2013). Involvement of emergency medical

services at unplanned births before arrival to hospital: a structured review. *Emerg Med J*

Peoria Area EMS System (2013). EMT Paramedic Training Program Clinical Instruction Plan:

Labor and Delivery. Retrieved September, 21st, 2013 from <http://www.paems.org/pdfs/student-handbook/paems-labor-delivery.pdf>

Verdile, V. Tutsock, G. Paris, P., & Kennedy, R. (1995). Out-of-hospital deliveries: a five-year

experience. *Prehosp Disaster Med*, 10(1), 10-3.