

Preventing Postpartum Hemorrhage Using Expedient Judy's 3,4,5 Protocol: Retrospective Cohort Study

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Abstract

Background: Postpartum hemorrhage was a deadly characteristic eliminated by evolution. No animals hemorrhage. The first case of documented human postpartum hemorrhage appears in the literature around 1400 AD. Human PPH appears to be a relatively recent occurrence, perhaps coinciding with the decrease in the use of squatting. A protocol called Judy's 3,4,5 calls for squatting delivery of the placenta between 3 and 5 minutes postpartum. Methodology: A retrospective cohort study of 1,024 planned, attended homebirths in Israel using Judy's 3,4,5 minute third stage protocol compared to 2,691 planned homebirths resulting in vaginal births in British Columbia using active management or expectant management of the third stage of labor. Results: Among similar groups of low risk births, active management, or expectant management resulted in 4.1% PPH over 500 cc, whereas Judy's 3,4,5 minute protocol resulted in 0% PPH over 500 cc. Conclusion: Judy's 3,4,5 minute protocol continues to result in less blood loss than any other third stage protocol at vaginal birth. The average blood loss is 100 cc for the first two hours after the birth of the newborn.

Background

A protocol for preventing postpartum hemorrhage of 500 cc or more at vaginal birth appeared in 2010. The logic behind the protocol is to get the placenta delivered expediently because if the placenta is delivered by 5 minutes, the uterus contracts and closes off the blood vessels preventing uterine atony. Delivering the placenta in squatting uses gravity and correct physiology to enable the placenta to come out whole, avoiding the problem of retained placenta.

Methodology

The study group were all the births from Jan. 1, 2000- March 18, 2020 (n=1,024) by the ALL THE WAY HOME birth practice in Israel. All the midwives who work for ALL THE WAY HOME birth service are licensed. Each birth outcome was recorded in a patient record and copied onto a google spreadsheet immediately after each birth. The practice includes low risk women who fulfill the following criteria: Singleton fetus; cephalic presentation or breech presentation determined after the onset of labor; gestational age greater than 35+5 and less than 42 completed weeks of pregnancy; spontaneous onset of labor; absence of significant pre-existing disease including heart disease, hypertensive chronic renal disease or type 1 diabetes; absence of significant disease arising during pregnancy, including pregnancy-induced hypertension with proteinuria (> 0.3 g/L by urine dipstick), antepartum hemorrhage after 20 weeks' gestation, gestational diabetes requiring insulin, active genital herpes, placenta previa or placental abruption. All women consented to delivering the placenta using Judy's 3,4,5 minute protocol previously described(1-3). All women in Israel have access to ALL THE WAY HOME birth practice. The practice provides free homebirth to any woman who cannot afford to pay the inexpensive fee.

The comparison group were all planned home births attended by registered midwives from Jan. 1, 2000, to Dec. 31, 2004, in British Columbia, Canada ($n = 2889$) (4) Midwifery care is funded by the provincial Ministry of Health and is accessible to all women in the province who meet the standards for low obstetric risk. The criteria for inclusion in British Columbia were identical to the study group with 4 additional exclusionary rules: Gestational age greater than 36 and less than 41 completed weeks of pregnancy; Mother has had no more than 1 previous cesarean section; Labor might be induced on an outpatient basis using prostaglandin or amniotomy; and Mother has not been transferred to the delivery hospital from a referring hospital.

Results

Study group: Nulliparous= 266 (26%)

Comparison group: Nulliparous= 1215/2889 (42%)

Study: Gave birth vaginally: 100%

Comparison: gave birth vaginally 2691/2889 (93%)

Study: Amniotomy 51 (5%), Pitocin augmentation 0 (0%)

Comparison: Amniotomy 560 (19%), Pitocin augmentation 172/2889 (6%)

Study: 1 (out of 1,024) case of postpartum hemorrhage over 500 cc. (0%) Typically, about 20 cc of coagulated blood appears attached to the placenta and about 80 cc on the diaper pad when the woman gets up to urinate and changes her pad at two hours postpartum. Five women lost 450 cc. One exceptional case in which the woman wanted to die at birth and kept screaming “I want to die” lost exactly 800 cc, on a plastic sheet, collected and measured in a jar. The blood was mixed with amniotic fluid, so may have been less than 800 cc.

Comparison: 110 (4.1%) out of 2,691 vaginal births, over 500 cc.

Study: Manual removal 3 (0%)

Comparison group: Manual removal 560 (19%)

Conclusions

Judy's 3,4,5 prevents postpartum hemorrhage using the simple tool of expedient squatting between 3 and 4 minutes after birth. A direct relationship between the occurrence of postpartum hemorrhage (PPH) and the length of the third stage was established by the elegant 2005 Magann et al study. IV Pitocin was used immediately after the delivery of the newborn in every birth. Despite the routine use of prophylactic Pitocin immediately after delivery of the newborn, PPH was a common result, however only where the third stage was longer than 3 minutes. Timing of the delivery of the placenta was the factor associated with PPH, not the use of Pitocin. “For third stages of labor more than 10 minutes compared with third stages less than 10 minutes there was twice the risk of postpartum hemorrhage. For a third stage of labor more than 20 minutes compared with less than 20 minutes there was four times the risk of postpartum hemorrhage, and for third stages over 30 minutes compared to those less than 30 minutes there was 6 times the risk of PPH.” (5) This study underlines the fact that it is expedience rather than IV Pitocin that prevents PPH. The most common definition for PPH, loss of over 1000 cc in the first hour, is experienced by about 5% of vaginal births, even using active management. (6) This bleeding is due to uterine atony, which means inadequate contraction of the uterus. At about 95% of vaginal births, the uterus contracts enough after the birth of the baby to close off the arteries that once supplied the placenta, regardless of when the placenta delivers. However, 5% of the time, the uterus does not contract enough after the birth of the fetus to close off the arteries previously supplying the placenta. The 5% of cases that suffer PPH are cases where it takes the placenta longer than 3 minutes after the birth of the baby, to deliver. In order to allow the cord to stop pulsing, the cord should not be cut before 2 minutes postpartum. Third stage protocol has to take into consideration the need for the

newborn to be attached to the cord for the 1-2 minutes after birth to provide the correct amount of blood and oxygen to the newborn.

The largest RCT, studying 849 women, used to justify active management of the third stage, reported postpartum hemorrhage rates over 1000 cc of 5 to 13 percent (6). The postpartum hemorrhage rate, defined as losing over 500 to 1000 cc in low-risk women, was 4% among 862 home births (7), and 4% among 2,899 planned home births (4). There is no published protocol, other than Judy's 3,4,5 that results in zero postpartum hemorrhage whether defined as losing over 500 cc or 1000 cc. (8) Blood loss is hard to measure. However, birth practitioners are familiar with what 10 cm or full dilation means. A 10 cm diameter ball of blood equals 524 cc blood loss. If the various clots and blood on the chux pad add up to a 10 cm diameter ball then the birthing woman had a hemorrhage over 500 cc. This is the average blood loss at vaginal birth today. Half a liter or 500 cc is 15% of the woman's blood volume and although not life threatening, using expedient delivery of the placenta in squatting, most of this blood loss can be prevented.

Except in the rare cases of placenta accreta, the placenta detaches within a minute of the birth. (9) As the baby delivers, the uterus changes shape such that the wall the placenta was previously attached to, no longer exists as it was before. (9) Delivering the placenta by 5 minutes after birth, in squatting, uses gravity to help deliver the placenta before uterine atony and placental retention occur. In contrast to this, if the woman is laying down, the placenta detaches and follows the pull of gravity downward, and ends up laying on the posterior side of the uterus below the level of cervix. Simultaneously, the cervix begins to close. When delivering the placenta with the woman laying down, the placenta has to fight its way out against gravity and the closing cervix. At births, using active management, where the placenta is delivered with the woman laying down, 5% experience blood loss over 1000 cc and 1% experience the placenta getting stuck behind a closed cervix and some women experience both. Manual removal is performed in about 1% of hospital vaginal births. This can be improved upon by having the woman squat. The question of what about women who cannot squat is a valid one. The answer is: Women having babies are young. Nearly all of them can still squat for a minute if they are motivated to do so. They are motivated to do so because it prevents them from having a hemorrhage.

It is logical for there to be a way to have hardly any blood loss at birth. No animals other than humans lose more than a spoonful of blood at birth. Humans have the same placental attachment as apes and chimpanzees, yet, apes and chimpanzees (10) never hemorrhage except in zoos where the birth is interfered with. Knowing this, it seems logical where there is a desire to prevent postpartum hemorrhage, to have the woman deliver the placenta by 5 minutes postpartum in squatting.

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Contribution to authorship: JSC planned, carried out, analysed and wrote the work.

Details of ethics approval: Impossible to get Review Board (IRB) for homebirth study in Israel. The Review Board refused to entertain anything outside the hospital setting. Patient consent received from every participant.

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References:

1. Cohain JS. A Proposed Protocol for Third Stage Management- Judy's 3,4,5,10 minute method. Birth 2010; 37(1):84-5.
2. Cohain JS. Back to basics to eliminate postpartum hemorrhage at vaginal birth. Birth 2016;43(1):93.
3. Cohain JS. Minimizing bleeding and tearing at vaginal births: one practitioner's experience. Women and Birth 2018;31(2):e144.
4. Janssen PA, Saxell L, Page LA, et al. Outcomes of planned home birth with registered midwife versus planned hospital birth with midwife or physician. CMAJ 2009;181(6-7):377-383.

5. Magann EF, Evans S, Chauhan SP, Lanneau G, Fisk AD, Morrison JC. The length of the third stage of labor and the risk of postpartum hemorrhage. *Obstet Gynecol.* 2005;105(2):290-3.
 6. Prendiville WJ, Elbourne D, McDonald S. Active versus expectant management in the third stage of labour. *Cochrane Database Systematic Rev* 2000;3:CD000007.
 7. Janssen PA, Lee SK, Ryan EM, et al. Outcomes of planned home births versus planned hospital births after regulation of midwifery in British Columbia. *CMAJ* 2002;166(3):315–323.
 8. Fahy KM. Third stage of labour care for women at low risk of postpartum haemorrhage. *J Midwifery Womens Health* 2009;54(5): 380–386.
 9. Williams JW, Pritchard JA, MacDonald PC (1980). *Williams Obstetrics*. 16th ed. New York: Appleton-Century-Crofts.
 10. Carter AM, Pijnenborg R. Evolution of invasive placentation with special reference to non-human primates. *Best Pract Res Clin Obstet Gynaecol.* 2011;25(3):249-57.
- A YouTube of placental delivery called, "Judy's 3.4.5 minute protocol eliminates severe postpartum hemorrhage over 1000 cc" shows a woman delivering her placenta using Judy's 3,4,5.