Estudos sobre o
Parto na Água

Fontes:
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Maternal and neonatal infections and obstetrical outcome in water birth.


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OBJECTIVES: The goal of our study was to assess the effect of water birth on obstetrical outcome, the maternal and neonatal infection rate in a selected low risk collective. STUDY DESIGN: In this prospective observational study (1998-2002) 513 women, wished to have a water birth. The study was approved by the local ethical committee, informed consent was obtained. According to the course of delivery, we compared three groups: woman who had a water birth, a normal vaginal delivery after immersion and a normal vaginal delivery without immersion. Outcome measurements were maternal and fetal infection rate, obstetrical outcome parameters and relevant laboratory parameters. RESULTS: The groups were comparable in terms of demographic and obstetric data. The maternal and neonatal infection rate and laboratory parameters showed no significant difference among the groups. There was no maternal infection related to water birth. There were five water born neonates and three neonates after normal vaginal delivery preceded by immersion with conjunctivitis. Significant differences were observed in obstetrical outcome parameters: less use of analgesia, shorter duration of first and second stage of labor, smaller episiotomy rate in water birth. In contrast no differences were seen in all observed fetal outcome parameters: APGAR score, arterial and venous pH, admission rate to neonatal intensive care unit. CONCLUSIONS: Water birth is a valuable alternative to traditional delivery. The maternal and fetal infection rate was comparable to traditional deliveries. A careful selection of a low risk collective is essential to minimize potential risks.

PMID: 17092628 [PubMed - as supplied by publisher]
Water birth, more than a trendy alternative: a prospective, observational study.


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OBJECTIVE: To prospectively assess the effect of water birth on maternal and fetal outcomes in a selected low-risk collective of a tertiary obstetrical unit. METHOD: In this prospective observational study, 513 patients of a low-risk collective, who requested a water birth, were studied during the years 1998-2002. Primary outcome measurements included the maternal and fetal parameters. Secondary outcome measurements comprised data on the incidence of water births in an interested, low-risk population in an academic hospital. RESULT: All groups were similar in terms of demographic and obstetric data. Significant differences were observed in maternal outcome parameters, which included the use of analgesia/anesthesia during labor, the duration of first and second stages of labor, perineal tears and episiotomy rate. No differences were seen in all observed fetal outcome parameters including APGAR scores, arterial and venous pH, admission rate to neonatal intensive care unit and infection rate. CONCLUSION: Water birth is a valuable and promising alternative to traditional delivery methods. The maternal and fetal outcomes were similar to traditional land births. However, currently there still exist some deficits in the scientific evaluation of its safety. Therefore, the selection of a low-risk collective is essential to minimize the risks with the addition of strictly maintained guidelines and continuous intrapartum observation and fetal monitoring. Based on our results and the literature, water births are justifiable when certain criteria are met and risk factors are excluded.

PMID: 16868755 [PubMed - indexed for MEDLINE]
Water birth: is the water an additional reservoir for group B streptococcus?


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OBJECTIVE: Water birth became popular in the last years, despite the fact that many questions like the risk of infection for the newborn remain unanswered. Group B streptococcal (GBS) infections in the newborn remain a challenge in obstetrics and neonatology. METHOD: We conducted a prospective trial to study the impact of water birth on the colonization rate of the bath water and, more importantly, the GBS-colonization rate of the newborn. RESULT: After water birth the bath water was significantly more often colonized with GBS than after immersion followed by a delivery in bed. The newborns, however, showed no difference in GBS colonization and there was even a trend towards less GBS colonization of the newborn after a water delivery. CONCLUSION: Regarding GBS colonization of the newborn during water birth there might be a wash out effect, which protects the children during the delivery.

PMID: 16208480 [PubMed - indexed for MEDLINE]

Experience of pain and analgesia with water and land births.

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Labor is one of the most painful experiences in a woman's life. Does water birth influence the pain experienced? Data from an ongoing, longitudinal, prospective observational study that spans 9 years and includes questionnaires from 12,040 births were used to evaluate pain perception (visual analogue scale (VAS)) and analgesic use. Three birthing methods were compared: water birth, bed birth and Maia stool birth. Based on the VAS, the data show that the different birthing methods do not influence the intensity of pain throughout the different stages of labor. The only
significant difference noted was that bed births are more painful in the early first stage, and less painful at the end of the second stage. This later difference may be due to increased use of epidural anesthesia in women choosing a bed birth. Women who choose bed births are significantly less likely than others to have an analgesic-free birth. For primiparas, there is also a small but significant difference showing that water births are less likely to require analgesics compared to Maia stool births. No such difference is seen in women who have given birth previously. We conclude that women who choose bed births perceive more pain in the early first stage of labor, leading them to be more likely to choose an epidural anesthesia in the late first stage, or to use other types of analgesics. Women who choose water births or Maia stool births are more likely to get through labor without using any analgesics.

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Review of 1600 water births. Does water birth increase the risk of neonatal infection?

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OBJECTIVES: We reviewed 1600 water births at a single institution over an 8-year period. METHODS: We compared 737 primiparae deliveries in water with 407 primiparae deliveries in bed, and 142 primiparae on the delivery stool. We also evaluated the duration of labor, perineal trauma, arterial cord blood pH, postpartum maternal hemoglobin levels, and rates of neonatal infection. In 250 water deliveries we performed bacterial cultures of water samples obtained from the bath after filling and after delivery. RESULTS: The duration of the first stage of labor was significantly shorter with a water birth than with a land delivery (380 vs. 468 minutes, P<0.01). The episiotomy rate in all water births was lower with a water birth than with a delivery in bed or a delivery on the birthing stool (0.38%, 23%, and 8.4%, respectively). The rate of perineal tears was similar (23%, respectively). There were no differences in the duration of the second stage (34 vs. 37 minutes), arterial cord blood pH, or postpartum maternal hemoglobin levels. No woman using the water birth method required analgesics. The rate of neonatal infection was also not increased with a water birth (1.22% vs. 2.64%, respectively). CONCLUSION: Water birth appears to be associated with a significantly shorter first stage of labor, lower episiotomy rate and reduced analgesic requirements when compared
with other delivery positions. If women are selected appropriately and hygiene rules are respected, water birth appears to be safe for both the mother and neonate.

PMID: 16147851 [PubMed - indexed for MEDLINE]


Waterbirths compared with landbirths: an observational study of nine years.

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AIMS: This study compares neonatal and maternal morbidity and mortality between waterbirths and landbirths (spontaneous singleton births in cephalic presentation, vacuum extractions are excluded). METHODS: In this observational study covering nine years, standardized questionnaires were used to document 9,518 spontaneous singleton cephalic presentation births, of which 3,617 were waterbirths and 5,901 landbirths. RESULTS: Landbirths show higher rates of episiotomies as well as third and fourth degree perineal lacerations. Waterbirths show a higher rate of births "without injuries", first and second-degree perineal lacerations, vaginal and labial tears. After a waterbirth, there is an average loss of 5.26 g/l blood; this is significantly less than landbirths where there is an 8.08 g/l blood loss on average. In 69.7% waterbirths required no analgesic, compared to 58.0% for landbirths. Water and landbirths do not differ with respect to maternal and neonatal infections. After landbirths, there was a higher rate of newborn complications with subsequent transfer to an external NICU. During the study, there were neither maternal nor neonatal deaths related to spontaneous labor. CONCLUSIONS: Waterbirths are associated with low risks for both mother and child when obstetrical guidelines are followed.

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The decision-making experience of mothers selecting waterbirth.

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Waterbirth has been a way of birth for 20 to 30 years abroad, while in Taiwan, only in the past three years have some women chosen water birth. This study aims to explore the decision-making experience of mothers selecting waterbirth. A phenomenological approach was employed in this study. Nine mothers who had given birth in water successfully in the midwife clinic in the past year were chosen and one-by-one, face-to-face interviews were conducted. The research tools included a basic information questionnaire, a semi-structured and open-ended interview guide, and an audio recorder to record the entire interviews. The content of the interviews was faithfully transcribed and analyzed with Giorgi's phenomenological method and Lincoln and Guba's qualitative credibility. Four main concepts concluded from the experience context of the studied women were: (1) Dissatisfaction with existing obstetric practices; (2) Demonstration of autonomy; (3) Consideration of relatives' attitude; and (4) Employing strategies to achieve goals. The result of this study can help nursing staff and the public to understand the decision-making experience of mothers selecting waterbirth, and help the contemplation of health care providers with respect to furnishing a more humanized birth environment in hospitals.

PMID: 14685932 [PubMed - indexed for MEDLINE]
OBJECTIVES OF STUDY: Comparison of chosen parameters of the I.-III. stage of labour by women, who conducted waterbirth (Group A) and by women, who delivered conventionally in horizontal position (Group B) and comparison of perinatal and postnatal results of newborns in both groups. DESIGN: Retrospective study. SETTING: Department of Obstetrics and Gynecology, District Hospital Znojmo. METHODS: Group A constitute 70 women, who delivered in the period 1.1.1998-30.9.2002 into the water (fetus was expelled under water). Control group B formed 70 women, who delivered in a conventional (horizontal position) and in the same time they did not have any contraindication to waterbirth. At first we compared the length of I. and II. stage of labour, the number of episiotomies, the number of some other kinds of injuries, the postpartal uterine hypotony and the volume of blood loss. In the second phase we evaluated clinical condition of the newborn. RESULTS: Waterbirth have chosen 1.95% of the women in our department during this period. There is no statistically significant difference in the duration of I. stage of labour in both groups. The II. stage was prolonged to 9 against 6 minutes in group A, most probably because of hydroanalgetic effect of warm water, due to some inhibition of contractions and "no interference access" to labour. There is no statistical difference in complications during and after the
labour in both groups. By group A we found statistically significant higher number of spontaneous, I. grade perineal ruptures, then in group B and we found reciprocal situation in number of episiotomies in both groups. There were no somatic differences by the newborns in both groups after delivery and we did not find higher occurrence of postnatal pathology by the waterbith babies either. CONCLUSION: Waterbirth is type of alternative obstetrics, which the women in birth demand, but which the obstetricians and neonatologists are afraid of, and which they consider to be possibly hazardous in the same time. There is documented evidence of much less performed episiotomies (nearly of 60%) and higher percentage deliveries without any injury (about of 9%). We did not prove any life or health threatening complication by the women in birth or by their newborns. Newborns from group A have completely comparable peri- and postnatal examination and investigation results with group B. In our study group we did not find higher occurrence of bleeding hypotonic uterus, infections or hypotension by the mother, comparing with the control group. There is often mentioned temporary bluish colour of the newborns by the critics of waterbith. This appearance we cannot comprehend as a cyanotic demonstration of fetal hypoxia but much more as the consequence of slower transformation from fetal to neonatal blood circulation. The same effect we can observe by the newborns, who were delivered conventionally in horizontal position and who are afterwards longer time connected by umbilical cord. Clear evidence for this contention is completely physiological evaluation and postnatal examination of all newborns by neonatologist after delivery and objective results of ABR and lactate from umbilical artery, which exclude fetal hypoxia too. As the conclusion we can claim, that waterbirth nowadays is one of legitimate methods of alternative obstetrics. The results of our study did confirm that this way of delivery does not represent any risk for the mother or the newborn and that there is no reason for an anxiety of obstetrician and neonatologist.

PMID: 12879656 [PubMed - indexed for MEDLINE]
Experience with water births: a prospective longitudinal study of 9 years with almost 4,000 water births

[Article in German]

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This prospective, longitudinal study spanning more than 9 years examines the influence of the birthing method, in particular water birth, on neonatal and maternal morbidity and mortality. Using questionnaires, maternal and neonatal data of 9,518 spontaneous singleton births with cephalic presentation, including 3,617 water births and 5,901 land births, were compared. Land births show significantly higher rates of episiotomies as well as third- and fourth-degree perineal tears. Waters births show a significantly higher rate of births 'without injuries', first- and second-degree perineal tears, vaginal and labial tears. The average loss of blood after water birth is -5.26 g/l; this is statistically significantly less than after land births at -8.08 g/l. In 69.7%, water births required no analgesic, compared to 30.3% for land births. Water and land births do not differ with respect to maternal and neonatal infections. After land births, there was a significantly higher rate of newborn complications with subsequent transfer to an external NICU. There were neither maternal nor neonatal deaths related to the birthing event. Water births are just as safe as land births if obstetrical guidelines are followed. Risks, such as preeclampsia, signs of infection, meconium-stained amniotic fluid and pathological CTG, are found more frequently in land births and indicate that a safe and prospective birth management is being followed.

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PMID: 12499752 [PubMed - indexed for MEDLINE]
Background: Waterbirths were introduced in 1991 as part of a new birth concept which consisted of careful monitoring and birth management, restrictive use of invasive methods and free choice of different birth methods. Methods: After the introduction of this new birth concept a prospective observational study was initiated. All parturients of the region give birth in our clinic without preselection, ours being the only birth clinic of the region. 2% of the parturients will be referred to a larger birth clinic (university clinic) mainly because of preterm births before the end of the 33rd week of pregnancy. Every one of the 7,508 births between November 1991, and May 21, 1997, was analyzed. In this article the birth parameters of mother and child in the most often chosen spontaneous birth methods will be compared to assess the safety of alternative birth methods in general and of waterbirths in particular. 2,014 of these 5,953 spontaneous births were waterbirths, 1,108 were Maia-birthing stool births and 2,362 bedbirths (vacuum extractions not included). Results: The parity and age of the mother as well as the newborn's birth weight are comparable in all 3 groups: waterbirth, Maia-birthing stool, and bedbirths. An episiotomy was performed in only 12.8% of the births in water, in 27.7% of the births on the Maia-birthing stool and in 35.4% of the bedbirths. These differences are statistically significant. In spite of the highest episiotomy rates, the bedbirths also show the highest 3rd- and 4th-degree laceration rates (4.1%), thus the difference between the rates for bedbirths and alternative births methods for severe lacerations is significant. The mothers' blood loss is the lowest in waterbirths. Fewer painkillers are used in waterbirths and the experience of birth itself is more satisfying after a birth in water. The average arterial blood pH of the umbilical cord as well as the Apgar scoring at 5 and 10 min are significantly higher after waterbirths. Infections of the neonate do not occur.
more often after waterbirths. No case of water aspiration or any other perinatal complication of the mother or child which might be water-related was reported. CONCLUSION: Waterbirths and other alternative forms of birthing such as Maia-birthing stool do not demonstrate higher birth risks for the mother or the child than bedbirths if the same medical criteria are used in the monitoring as well as in the management of birth. Copyright 2000 S. Karger AG, Basel.

PMID: 10971083 [PubMed - indexed for MEDLINE]
Routine episiotomy in modern obstetrics. Is it necessary?

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The study presents a literature review on the benefits and risk of the routine episiotomy during the second stage of labour. Perineal trauma complications as well as perinatal outcomes are discussed. The risk of stress incontinence and sexual dysfunction are described. New techniques for improve of perinatal outcomes and prevention of post partum incontinence are described. Routine episiotomy gives poor effects in many cases. Perineal massage during pregnancy, waterbirth, are most interesting methods to avoid routine episiotomy and improve the quality of life in post partum women.

PMID: 12152258 [PubMed - indexed for MEDLINE]
Immersion in water in pregnancy, labour and birth

Summary

**Immersion in water during the first stage of labour significantly reduces women's perception of pain and use of epidural/spinal analgesia**

Water immersion during the first stage of labour significantly reduces epidural/spinal analgesia requirements and reported maternal pain, without adversely affecting labour duration, operative delivery rates, or neonatal wellbeing. Immersion in water during the second stage of labour increased women’s reported satisfaction with pushing. Further research is needed to assess the effect of immersion in water on neonatal and maternal morbidity. No trials could be located that assessed the immersion of women in water during pregnancy or the third stage of labour.

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Abstract

**Background**

Enthusiasts for immersion in water during labour, and birth have advocated its use to increase maternal relaxation, reduce analgesia requirements and promote a midwifery model of supportive care. Sceptics are concerned that there may be greater harm to women and/or babies, for example, a perceived risk associated with neonatal inhalation of water and maternal/neonatal infection.
Objectives
To assess the evidence from randomised controlled trials about the effects of immersion in water during pregnancy, labour, or birth on maternal, fetal, neonatal and caregiver outcomes.

Search strategy
We searched the Cochrane Pregnancy and Childbirth Group trials register (September 2003).

Selection criteria
All randomised controlled trials comparing any kind of bath tub/pool with no immersion during pregnancy, labour or birth.

Data collection and analysis
We assessed trial eligibility and quality and extracted data independently. One reviewer entered the data and another checked them for accuracy.

Main results
Eight trials are included (2939 women). No trials were identified that evaluated immersion versus no immersion during pregnancy, considered different types of baths/pools, or considered the management of third stage of labour. There was a statistically significant reduction in the use of epidural/spinal/paracervical analgesia/anaesthesia amongst women allocated to water immersion water during the first stage of labour compared to those not allocated to water immersion (odds ratio (OR) 0.84, 95% confidence interval (CI) 0.71 to 0.99, four trials). There was no significant difference in vaginal operative deliveries (OR 0.83, 95% CI 0.66 to 1.05, six trials), or caesarean sections (OR 1.33, 95% CI 0.92 to 1.91). Women who used water immersion during the first stage of labour reported statistically significantly less pain than those not labouring in water (40/59 versus 55/61) (OR 0.23, 95% CI 0.08 to 0.63, one trial). There were no significant differences in incidence of an Apgar score less than 7 at five minutes (OR 1.59, 95% CI 0.63 to 4.01), neonatal unit admissions (OR 1.05, 95% CI 0.68 to 1.61), or neonatal infection rates (OR 2.01, 95% CI 0.50 to 8.07).

Authors' conclusions
There is evidence that water immersion during the first stage of labour reduces the use of analgesia and reported maternal pain, without adverse outcomes on labour duration, operative delivery or neonatal outcomes. The effects of immersion in water during pregnancy or in the third stage are unclear. One trial explores birth in water, but is too small to determine the outcomes for women or neonates.
August 21, 1999 should be remembered as a landmark in the history of birthing pools. On that day the British Medical Journal published an unprecedented study about "the perinatal mortality and morbidity among babies delivered (sic) in water" (1).

This study is authoritative for several reasons:

- The conclusions are based on large numbers: the authors traced the 4,032 babies born under water in England and Wales between April 1994 and March 1996.
- The authors belong to a prestigious department of epidemiology and public health (Institute of Child Health, London, United Kingdom).
- The report has been published in a respected peer review medical journal.

Methods

In order to convince anyone of the seriousness of this study, all midwives should be aware of the sophisticated methods used by the London epidemiologists. Several inquiries were combined in order to eliminate the effects of under-reporting.

From April 1994 to April 1996, all 1,500 consultant pediatricians in the British Isles were surveyed each month by the "British Paediatric Surveillance Unit" and asked to report whether or not they knew of any births that met the case definition of "perinatal death or admission for special care within 48 hours of birth following labour or delivery in water." The findings were compared with reports to the confidential inquiry into stillbirths and death in infancy (a mandatory notification scheme). At the same time a postal questionnaire was sent to all National Health Service (NHS) maternity units in England and Wales in 1995 and again in 1996 to determine the total number of deliveries in water during the study period.
Results

The main results can be easily summarized and remembered.

There were five perinatal deaths among 4,032 births in water; that is a rate of 1.2 per 1,000. In the context of the United Kingdom this rate is similar for low risk deliveries that do not take place in water. Furthermore, none of these five deaths were attributable to delivery in water: one stillbirth was diagnosed before immersion; another stillbirth occurred after a concealed pregnancy and unattended homebirth with no previous prenatal care; one baby died aged three days with neonatal herpes infection; one died aged thirty minutes with an intracranial hemorrhage after precipitate delivery; and another one, who died aged eight hours, was found to have hypoplastic lungs at postmortem examination.

There were thirty-four babies admitted for special care; that is a rate of 8.4 per 1,000. Rates of admission for special care of babies born to low risk primiparous women are significantly higher than for babies born in water. Birth in water may have caused water aspiration in two babies.

Comments

Compared with well known anecdotes, such as one case of neonatal polycythemia reported in The Lancet in 1997(2), this survey of more than 4,000 babies born (rather than delivered!) in water has been paradoxically ignored by the media, the medical circles and the natural childbirth movement as well. However, it undoubtedly represents a landmark in the history of the use of water during labour. From now on midwives should not be the prisoners of strict protocols. Updated flexible guidelines should accept that "in any hospital where a pool is in daily use a birth under water is bound to happen now and then"(3). Midwives are far less anxious and invasive wherever a birth under water is considered acceptable if the woman does not have the time or is reluctant to get out of the water during a powerful "fetus ejection reflex."

The first effect of this study should be to change the focus. An opportunity is given to recall that the main reason for the birthing pools is to facilitate the birth process and to reduce the need for drugs and other intervention. In order to control the current epidemic of epidurals the point is to divulge a small number of simple updated recommendations in order to make the most effective use of birthing pools.

Updated recommendations
The main recommendations are based on the fact that immersion in water at the temperature of the body tends to facilitate the birth process during a limited length of time (in the region of an hour or two). This simple fact is confirmed by clinical observation and by the results of a Swedish randomised controlled study suggesting that women who enter the bath at five centimetres or after ("late bath group") have a short labour and a reduced need for oxytocin administration and epidural analgesia (4).Physiologists can offer interpretations. The common response to immersion is a redistribution of blood volume (more blood in the chest) that stimulates the release by specialized heart cells of the atrial natriuretic peptide (ANP). The inhibitory effect of ANP on the activity of the posterior pituitary gland is slow, in the region of one to two hours (5). When a woman is in labour this inhibitory effect is preceded by an analgesic effect that is associated with lower levels of stress hormones and increased release of oxytocin. Furthermore it is partly via a release of oxytocin that the redistribution of blood volume stimulates the specialized heart cells.

The first practical recommendation is to give great importance to the time when the laboring woman enters the pool. Experienced midwives have many tricks at their disposal to help women be patient enough so that they can ideally wait until five centimetres dilation. A shower, that more often as not implies complete privacy, is an example of what the midwife can suggest while waiting. The BMJ survey clearly indicates that many women stay too long in the bath (the average time was in the region of three hours for women who gave birth in water!). One reason is that many of them enter the bath long before five centimetres.

The second recommendation is to avoid planning a birth under water. When a woman has planned a birth under water she may be the prisoner of her project; she is tempted to stay in the bath while the contractions are getting weaker, with the risk of long second and third stages. There are no such risks when a birth under water follows a short series of irresistible contractions.

The recommendations regarding the temperature should not be overlooked. It is easy to check that the water temperature is never above 37° C (the temperature of the maternal body). Two cases of neonatal deaths have been reported after immersion during labor in prolonged hot baths (39.7° C in one case) (6). The proposed interpretation was that the fetuses had reached high temperatures (the temperature of a fetus is 1° higher than the maternal temperature) and could not meet their increased needs in oxygen. The fetus has a problem of heat elimination.

At the dawn of a new phase in the history of childbirth one can anticipate that, if a small number of simple recommendations are taken into account, the use of water during labor will seriously compete
with epidural anesthesia. Then helping women to be patient enough and enter the pool at the right time will appear as a new aspect of the art of midwifery.

Michel Odent, MD founded the Primal Health Research Centre in London and developed the maternity unit in Pithiviers, France, where birthing pools are used. He is the author of ten books published in twenty languages. Two of them—Birth Reborn and The Nature of Birth and Breastfeeding—were published originally in the United States. His most recent book is The Caesarean.

References