College of Midwives of British Columbia

Guideline for the Use of Water in Labour and Birth

Preamble
The therapeutic properties of warm water immersion have been known for centuries. Baths, showers and whirlpools have been used for comfort during labour for many years. Over the past decade immersion in water for the birth of the baby has aroused interest in many countries and an increase in the number of women requesting this option for both hospital and out-of-hospital births is occurring.

The College of Midwives has reviewed the best available evidence and offers this guideline to assist midwives and women in their decision making process around the use of water immersion for labour and birth. The body of evidence in this area is small but growing.

Maternal and neonatal outcomes after water immersion for labour and birth have been assessed in two large surveys over a four year period in England and Wales (Alderdice, Renfrew & Marchant, 1995; Gilbert & Tookey, 1999) Researchers reviewed 4693 and 4032 births where water immersion was used and found no difference in outcomes for women and their newborns compared to a cohort group of low risk women who did not use water.
The perinatal mortality rate for these births was comparable to other low risk births in the UK. Water aspiration occurred in two babies born into water; however, no deaths were attributed to water birth (Gilbert and Tookey 1999). Admissions to special care baby units were slightly lower for the water-born babies than admissions for other low-risk babies.

Other researchers (Burns 2001; Lenstrup et al, 1987; Rush et al,1996; & Waldenstrom et al, 1992) have made similar outcome reports. A recent Canadian randomized control trial reported women experienced less pain after water immersion than their non-immersion counterparts and over 80% of the water immersion group said they would use the tub in subsequent labours (Rush et al, 1996).

A recent exception has been published. A small randomized controlled trial of 274 women compared the use of warm water immersion in the first stage of labour to their standard of care that excluded tub use (Eckert, Turnbull & MacLennan, 2001). They reported no differences between groups in maternal or neonatal morbidity or mortality with two exceptions. Babies born in the water

immersion in labour group required more resuscitation efforts, and women who were randomized to the control group rated their overall experience of childbirth more positively. Interestingly, there were no differences between groups in APGAR scores, NICU admissions, and neonatal infections. The authors' conclusions that the use of water for labour and birth may contribute to adverse outcomes should be viewed with considerable caution. There are several methodological problems with this study, these results are not congruent with the findings of several other larger trials of similar design and their statistical analysis does not support their recommendations. It is clear more research is needed into this form of care.

In the absence of a substantial body of evidence on the use of warm water immersion for labour and birth, the potential advantages and disadvantages, which follow, are in part derived from experience or theoretical considerations. This guideline will be updated as more evidence becomes available.

Potential Advantages of Water Immersion

- The buoyancy of water enables a mother to move more easily;
- Blood pressure is lowered;
- Comfort & relaxation may be enhanced;
- Maternal sense of control may increase, which in turn enhances emotional well-being;
- Pain may be diminished;
- The need for pharmacological pain relief may be reduced;
- Length of labour may be reduced;
- Improved perineal stretching may reduce trauma;
- Operative births may be reduced.

Potential Disadvantages

- Decrease in uterine contraction strength and frequency, especially if used before active labour is established;
- Neonatal water aspiration; at least two cases have been recorded
- Maternal hyperthermia may contribute to fetal hypoxemia;
- Neonatal hypothermia is possible if water temperature is too cool;
- Cord immersion in warm water may delay vasoconstriction, increasing red cell transfusion to the newborn and promoting jaundice;
- Blood loss estimation and assessment is difficult in the water;
- Maternal and Neonatal infection may be increased; not supported by the evidence
- Theoretical risk of maternal water embolus;

- Risk of acquiring blood born infection or sustaining back injury for caregivers.

Recommended Criteria for the use of a water pool

- An uncomplicated pregnancy of at least 37 weeks gestation;
- Established active labour (i.e. good regular contractions; dilation of the cervix and descent of the presenting part).

Contraindications for birth in a water pool

- Pre-term labour;
- Maternal infection with a bloodborn pathogen such as Hepatitis B or C or HIV [1];
- A woman who has meconium-stained amniotic fluid may use a water pool for immersion during labour, so long as close monitoring of the fetal heart takes place and findings are reassuring. She should be asked to get out of the pool for the birth of the baby to facilitate suctioning of the oral and nasal pharynx once the head is born.
- Caution should be used when considering water immersion if sedation has been administered to the woman. Individual responses to sedation vary; the woman must be able to get in and out of the tub without difficulty and be fully conscious and aware of her surroundings while in the water. She should never be left alone.

Recommendations for the use of water immersion for labour and birth

- Midwives should discuss the potential advantages and disadvantages of water immersion for labour and birth with each woman prior to labour.
- The woman's vital signs and the fetal heart rate must be within normal limits.
- The fetal heart should be monitored according to accepted guidelines. Use of a waterproof Doppler device is recommended.
- The water temperature should be monitored and maintained between 36 and 37.5 C to prevent hypo or hyperthermia. The temperature may be monitored with a floating thermometer.
- The woman's temperature should be monitored and she should leave the water if her temperature exceeds 37.5 degrees C.
- The woman should be encouraged to maintain adequate hydration and leave the pool to urinate at regular intervals.
- The woman should be asked to leave the water if there are any concerns about her or her baby's well being.
- An alternative birth place should be set up close to the pool.

- The water should be kept as clean as possible. Stool and blood clots must be removed from the tub immediately. The tub should be drained, cleaned and refilled if the pool is being used over a number of hours or if contaminants cannot be easily removed.
- The baby should be born completely underwater with no air contact until the head is brought to the surface, as air and temperature change may stimulate breathing and lead to water aspiration.
- At birth the baby's head must be brought to the surface immediately. Care should be taken to avoid undue traction on the cord. There have been reports of cord tearing. Some authors recommend early clamping of the cord to prevent polycythemia and reduce the risk of fetal blood loss if the cord integrity is compromised.
- Care should be taken to maintain the newborn's temperature to prevent hypothermia.
- The placenta is best delivered outside of the tub to accurately assess maternal bleeding.
- Birth pools that are being used in hospital or that will be used again by another birthing mother should be cleaned between uses with a chlorine-releasing agent to kill any blood born pathogens.

As when caring for any mother or newborn, the midwife is responsible for using her clinical judgment, responding appropriately to problems that may arise, and for documenting her actions.

References

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1 While there is currently no evidence of increased rates of infection with specific bacteria or viruses with water birth, if a woman is know to be colonized with an infectious agent, such as Group B Strep bacteria, and wishes to give birth in water, it is important for the midwife to discuss the possibility of transmission of infection to the newborn when she is reviewing options for care.