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Introduction

Official acceptance of the use of water immersion as a care option during labour came in the UK in 1993, with the publication of the Changing Childbirth report (Department of Health, 1993), which recommended that a pool facility should be an option available to women in all UK maternity units. Professional recognition of the use of water during labour and birth came in 1994 when both the Royal College of Midwives (RCM 1994) and the United Kingdom Central Council for Nursing, Midwifery and Health Visiting (UKCC 1994) published position statements, which incorporated water immersion during labour into the role of the midwife.

The use of water during labour is now a widely accepted practice in the UK, supported by national guidelines published by organisations such as NICE (2014) and RCM (2011). The Scottish Government's (2017) review of maternity services also identified women's desire for the availability of modern facilities, including birthing pools and recommended that health boards should endeavour to provide the choice of labouring in water as part of a range of pain relief options for women

Benefits and risks of water labour/birth

Although the most comprehensive recent review into the use of water during labour and/or birth found no significant differences in the outcome for women (i.e. mode of delivery) (Cluett et al., 2018), the benefits felt by women are well documented in qualitative research. Women have reported feeling calmer, more relaxed and more comfortable in water (Cluett et al 2018). They also reported a greater sense of control and satisfaction with their labour and birth (Carlsonn & Ulfsdottir, 2020).The Cochrane review (Cluett et al., 2018) found that there was less use of regional analgesia in those women who had used immersion in water during their labour.

It has been suggested that the buoyancy of the water, which allows more ease of mobility for the labouring woman, can help to encourage flexion of the fetal head and thereby optimise the fetal position for a normal birth (Ohlsson et al 2001). Where hydrotherapy reduces the need for pharmalogical pain relief this also reduces risk to the fetus from exposure to certain drugs (Cluett et al, 2018).

Whilst there is currently insufficient evidence to assess the effect of hydrotherapy on other outcomes such as blood loss, perineal tears and neonatal unit admission, there is no evidence to suggest that it has an adverse impact on these outcomes and it is generally felt to be a safe practice (Nutter et al, 2014, Cluett et al, 2018).

Eligibility criteria for entering the pool in labour

NICE (2014) recommends that all healthy women with uncomplicated pregnancies should be offered the chance to labour in water. The RCM (2011) also states that all women who wish to use water immersion in labour should be supported to do so, providing local guidelines and individual care needs can be met.

Normal criteria for entering the birthing pool are as follows:

- Singleton pregnancy
- Term pregnancy (> 37 weeks' gestation)
- Spontaneous labour / low risk IOL
- Cephalic presentation
- Maternal observations within normal limits
- Fetal monitoring reassuring
- No known obstetric or significant medical complications (ie. 'low-risk' pregnancy)
- SRM <24 hours
- No opioid administration within 2 hours (or if woman remains drowsy after 2 hours)
- Negative for HIV, Hepatitis B and C
- No suspicion of COVID-19 (ie. asymptomatic and no known contact with confirmed/suspected case)

In the event of a woman who does not meet these criteria wishing to use the birthing pool, an individual risk assessment should be made about whether it is safe/ appropriate for her to do so, in discussion with a senior midwife and / or obstetrician. Please record the discussion in Badgernet.

Maternal Risk Factors

Group B Strep

Low risk women known to be colonised with Group B haemolytic streptococcus and offered intravenous antibiotic therapy may use the pool. The site of the cannulae should be protected from the water using a water proof dressing and the women should be encouraged to keep the cannulae clear of the water where possible. The woman does not need to leave the pool whilst antibiotics are administered. Observations will be commenced on the baby after birth in accordance with normal protocol for babies born to Group B Strep carriers. 4

Pre-labour rupture of membranes at term

In the absence of complications (e.g. pyrexia, meconium stained liquor etc) there is no reason to deny a woman her wish to use the pool. Evidence suggests that 60% of women will go into labour within 24 hrs of SRM (NICE 2014).

Raised BMI

If a woman has a BMI of >40 it is recommended that a risk assessment is carried out and documented in Badgernet. Consider:

- Ability to enter / exit the pool safely and unassisted
- Ensure the fetal heart can be auscultated with a handheld Doppler

Continuous Fetal Monitoring

If continuous electronic fetal monitoring (CEFM) is indicated but the woman wishes to use the pool she should be offered telemetry (NICE, 2014). The telemetry unit should be applied and a drip stand used to hang the unit on at the side of the pool, the CTG leads are safe for use in the water – care should be taken to avoid splashing the telemetry unit.

If a woman declines CEFM this should be recorded in the notes and intermittent auscultation should be performed.

All women should understand that if there are any concerns about her or her baby's wellbeing she may be asked to exit the pool (RCOG & RCM, 2006).

Care of the woman in the pool

All midwives should ensure they feel confident and competent in providing care to a woman in the birthing pool for labour and delivery. They should be aware of local policies and procedures for evacuation if an emergency were to occur.

Entry to the pool should be determined by the woman's choice and not by the dilatation of the cervix. There is currently no evidence that earlier immersion in water before a cervical dilatation of 5cm is detrimental to women progressing in labour. (Cluett & Burns 2012)

The water should be run for four minutes prior to commencement of filling the pool; a weekly record of flushing of the pool plumbing is retained in the Labour Ward Checks register. The hot water supply in the BGH is thermostatically set to 42 degrees Centigrade. The pool takes 12 minutes to fill.

Routine maternal and fetal observations should be performed as normal in labour. In addition, the woman's temperature and the temperature of the water should be checked and documented on her entry to the pool and hourly thereafter (whilst she remains in the pool). The woman's preference may guide the temperature of the pool but it should not exceed 37.5 degrees Celsius (NICE, 2014).

Entenox can be used safely in the pool.

Delivery in the pool

There is insufficient evidence to either support or discourage women giving birth in water (NICE, 2014). If a woman wishes to deliver in the pool she should be supported to do so.

A hands-off approach should be adopted for delivery of the baby. The woman or the midwife may guide the baby to the surface, keeping the baby's body under the water.

If the woman raises herself out of the water and exposes the head to air she must remain out of the water to avoid the risk of premature gasping (RCOG 2009).

Episiotomy should not be performed under water.

If the shoulders and body are not born in the contraction following the delivery of the head, ask the woman to stand up and place one foot on the side of the pool to increase the pelvic diameter. If this does not result in delivery then initiate the shoulder dystocia emergency protocol.

Third stage of labour

There is insufficient evidence available on the effect of water immersion on the third stage of labour, either physiological or actively managed (RCM, 2011). In practice it can be difficult to estimate blood loss when a woman delivers in the pool and therefore women are asked to leave the pool to deliver their placenta. If a woman declines to leave the pool the midwife should be vigilant for signs of excessive bleeding, and if there any concerns the woman should be asked to leave the pool and PPH protocol initiated.

If the woman has delivered on dry land and perineal suturing is required it should be carried out as soon as possible in order to reduce the risk of infection and blood loss (NICE, 2014). However if the woman has delivered in the pool then it is advisable to wait for 1 hour before suturing to allow water to dissipate from the tissues unless there is ongoing bleeding that requires immediate attention (Health Care Improvement Scotland, 2008).

Evacuation from the pool

If the woman loses consciousness the emergency buzzer should be pulled. There are floats to keep the woman above the water. Women can be removed from the pool manually using the red & black net sling. The sling is stored on the top shelf of the cupboard in the pool room. Staff should familiarise themselves with the use of this sling prior to working in the pool room. Please note this manoeuvre requires multiple staff to ensure safe completion. In the event of an evacuation, remove the resuscitaire from the room to allow space to bring a bed to the end of the pool.

Environmental Safety

A disposable sieve should be kept in the room to remove any debris from the water when the woman is in the pool. After each use the pool should be promptly drained and rinsed. Between each patient the pool should be thoroughly cleaned using Tristel-Fuse solution and disposable cloths.
If the entenox head becomes submerged in water it must be sent to ASDU for sterilisation after use.
Midwives should be mindful of infection control risks, and wear gloves for contact with water. Midwives should also apply the principles of efficient moving and handling when working in the pool room.

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Appendix 1

COVID-19 and Waterbirth

The RCM has issued guidance on waterbirth during the COVID-19 pandemic. Current evidence does not support a blanket ban on the use of water for labour and birth. The RCM (2020) recommends the following good practice when caring for women who wish to use the birthing pool during the pandemic:

- Screen all women for symptoms of COVID-19 or close contact with a known / suspected case
- Women who are suspected or confirmed to have COVID-19 are recommended not to use the birthing pool due to the possible increase in risk of transferring infection to staff or their baby
- Women who have current diarrhoea are not recommended to use the birthing pool due to the risk of contaminating the pool with faecal matter
- A normal risk assessment should still be undertaken for all women who wish to use the pool in labour
- Midwives should adhere to up-to-date guidance on PPE when working with women in the pool, **in particular using long gauntlet gloves** for contact with the water
- Approaches to be used to reduce the number of times that the midwife places their hands into the water. Asking woman to raise her abdomen above the water in order to have the fetal heart rate auscultated or the woman.

- Ensure the pool room is well-ventilated – this may mean having the door open with screens / curtain to protect the woman's privacy
- Midwives caring for a woman in the pool may become very warm so should have access to regular breaks and ensure they drink plenty of fluids
- It may be useful to have a second member of staff in the room for documentation (especially during second stage) to allow the midwife to maintain infection control procedures
- For infection control reasons, it is recommended that the woman leaves the pool for the third stage of labour