Postdates Pregnancy

MANAGEMENT OF THE UNCOMPLICATED POSTDATES PREGNANCY

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Acknowledgements

PRINCIPAL AUTHORS
Yarra Vostrcil, RM
Chloe Dayman, RM

CONTRIBUTORS
Department of Midwifery Guidelines Committee

Andrea Mattenley (Chair), RM
Cora Beitel, RM
Amelia Doran, RM
Jennifer Duggan, RM
Leslie Gunning, RM
Kelly Hayes, RM
Carolyn Hunt, RM
Carole Miceli, RM
Corina Pautler, RM
Katie McNiven-Gladman, RM
Thea Parkin, RM
Mandy Reid, RM
Laura Willihnganz, RM

Preamble

Guidelines outline recommendations, informed by both the best available evidence and by midwifery philosophy, to guide midwives in specific practice situations and to support their process of informed decision-making with clients. The midwifery philosophy recognizes the client as the primary decision maker in all aspects of her care and respects the autonomy of the client (1).

The best evidence is helpful in assisting thoughtful management decisions and may be balanced by experiential knowledge and clinical judgment. It is not intended to demand unquestioning adherence to its doctrine as even the best evidence may be vulnerable to critique and interpretation.

The purpose of practice guidelines is to enhance clinical assessment and decision-making in a way that supports practitioners to offer a high standard of care. This is supported within a model of well-informed, shared decision-making with clients in order to achieve optimal clinical outcomes.

Background

The College of Midwives of British Columbia supports registered midwives in providing primary care for women with post-dates pregnancies. This guideline is intended to assist midwives in offering choices to these women.

Definitions

The following are World Health Organization (WHO) definitions (2). There is widespread use of these terms interchangeably within the medical community, in research and in textbooks.

Post-term pregnancy is a pregnancy that extends to or beyond 42 weeks or 294 days. More recently it has been used to refer to any pregnancy that goes beyond 41 weeks.

Post-dates pregnancy is a pregnancy that extends beyond 40+0 weeks plus one or more days (anytime past the estimated due date).

Prolonged pregnancy is any pregnancy past 42weeks; synonymous with post-term.

Incidence

In Canada, the rate of post-term pregnancy has been close to 2.9% since the mid-1990s (3).

Review of available randomized controlled trials comparing increased monitoring at 41 weeks to induction of labour at 41 weeks finds that women who were monitored had a greater than 40% chance of spontaneous onset of labour prior to 42 weeks gestation (4,41,42,45,48,49,53,54).

Accurate Estimated Due Date (EDD)

There are a variety of methods for establishing the EDD.

A. Length of gestation

The overall length of gestation is calculated from the first day of the last menstrual period (LMP) based on a 28 day cycle and is often cited as 280 days or 40.0 weeks (5-8). The actual length of gestation is the time from conception until delivery, reflecting a 266 days interval from conception; however, there is some empirical evidence that suggests from ovulation the gestational period can be between 266 and 274 days (6,8 &9).

Two large retrospective analyses of birth data have concluded that the overall length of gestation is longer than 280 days (10 & 11). One study found the mean time to spontaneous birth from LMP as 283 days while another study found 282 days (10 &11). Using this evidence, "an uncomplicated pregnancy with certain dates would only be considered outside the standard deviation of normal, if the duration of the pregnancy is greater than forty-two weeks and three days (296 days)" (12).

B. Date of conception

Basal body temperature before and after conception can be used reliably to determine the onset of pregnancy (8). LMP dating is less accurate than the combination of accurate recording of basal body temperature along with monitoring of mucous or urine-test kits to predict ovulation (13). If the conception date is known by women who track their cycles or if conception occurred by in vitro fertilization or insemination, adding 266 days will provide the most accurate EDD (13).

C. Menstrual dating

The standard method for EDD calculation using LMP is by Naegele's Rule, applied to pregnancy wheels; however, there are some concerns surrounding the accuracy of this method. These include:

1. 280-283 day calculation depending on the months that are being calculated (6);
2. Inaccurate recall of when the client's LMP began;
3. Variations in the follicular phase of the menstrual cycle;
4. Difficulty determining between menstrual bleeding, breakthrough, or implantation bleeding;
5. Oral contraceptive use or any other factor that might influence ovulation timing (7).

D. First Trimester Ultrasound

For the most accurate estimation of gestational age, first trimester ultrasound has a margin of error of +/- 5 days. Research between 2001 & 2002 has shown:

1. First trimester ultrasound for dating significantly decreases the incidence of birth after 41+0 and 42+0 weeks of gestation (14).
2. Routine use of first trimester ultrasound demonstrated a statistically significant reduction of induction of labour for pregnancy >/= 41+0 from 13% to 5%" (15).

The 2008 SOGC Guidelines for the Management of Pregnancy at 41+0 to 42+0 Weeks recommends routine first trimester ultrasound to reduce error in EDD estimation and reduce induction of labour between 41+0 and 42+0 weeks (12,16 & 17).

Accurate Estimated Due Date (EDD) cont'd

In Summary

"Ultrasound dating measures the size of the fetus, which is believed to be equivalent to knowing gestational age, with a margin of error of 8%. LMP dating estimates the length of pregnancy. Ultrasound dating does not prevent post-term pregnancy; rather it measures fetal size, addressing errors that may occur due to LMP dating such as inaccurate recall of menstrual dates and factors that influence ovulation timing. Studies have consistently shown that the use of ultrasound dates alone result in fewer post-term births than LMP alone, or any algorithm used to adjust EDD based on combination of LMP and ultrasound estimates." (18)

CONSIDERATIONS FOR PROVIDING AN ACCURATE ESTIMATION OF EDD:

- An accurate menstrual history is recommended to provide most precise estimation of EDD.
- A known date of conception will contribute to an accurate EDD.
- To calculate EDD counting 266 days from known date of conception or 280 days from LMP is preferred over calculating EDD from gestational wheel.
- First trimester ultrasound should be offered to all women in pregnancy ideally between 11-14weeks.
- If there is a difference greater than 5 days between LMP dating and early ultrasound dating, then the EDD should be adjusted to reflect the early ultrasound.
- If there is a difference of greater than 10 days between LMP dating and dating of second trimester ultrasound, then the EDD should be adjusted to reflect the second trimester ultrasound.
- When there has been a first and second trimester ultrasound, then EDD should be used from the first trimester ultrasound.
- When there is more than one first trimester ultrasound EDD should be adjusted based on the ultrasound closest to 11-14wks.

Potential Complications of pregnancy > 41+0 weeks

Table 1: Risks of expectant management versus induction of labour after 41+0 weeks.

	Pregnancy >41+0 weeks	**Induction of labour**
Perinatal/fetal risks	Meconium stained amniotic fluid–RCTs show an increased risk of up to 50% compared with prior to 41wks. No statistically significant increased risk of MAS or of NICU stays. (4,43-45,48-52)	Fetal compromise as a result of uterine hyperstimulation. (27)
		Neonatal immaturity if dating is inaccurate. (27)
		Fetal compromise as a result of prolonged induction of labour, e.g. Chorioamnionitis. (27)
	Macrosomia –4/9 RCTs reporting this outcome found a RR of 2 or greater for a macrosomic baby with postdates monitoring. None found an association with shoulder dystocia, NICU stays or PPH. (4, 41-47,49)	
	Stillbirth risk in following week per 1000 undelivered women at beginning of week: 37 weeks: .20 - .51 40weeks: .45-.88 41weeks: .60-1.27 42weeks: 1.55-3.69 (19-26) *	
Maternal risks		Increased use of epidural analgesia. (28)
		Increased risk of Caesarean section for primiparous women – 37.8% with IOL vs 21.8% for spontaneous labour, and possibly for multiparous women in BC as well. (17)
	Possible increase in interventions and Caesarean section rates due to simple knowledge of women being 'postdates'. (18)	For primiparous women – complications associated with prolonged labours or failed inductions, i.e.Chorioamnionitis, operative delivery. (27)
		For multiparous women –uterine hyperstimulation (27)

(2, 5, 6, 7, 8,9 & 23)

** Randomized controlled trials, the highest quality of study available, have not had enough enrolment to show a statistical difference in stillbirth rates, and would need to have a minimum of 30,000 women enrolled in order to be useful. At this time the best available data on stillbirth that we have is population-based retrospective data, with potential issues including whether the pregnancy was in fact low-risk, how the pregnancy was dated, and how or if the pregnancy was monitored after 41 weeks.*

Interventions to Promote Spontaneous Labour

Midwives may use a variety of methods in late pregnancy to avoid post-term pregnancy and induction of labour. These methods may include: sweeping of the membranes, evening primrose oil, herbs, acupuncture, homeopathics as well as other alternative therapies. These alternative therapies can be beneficial in supporting the natural physiologic changes at the end of pregnancy, and potentially reducing the incidence of induction of labour. There are also other alternative remedies, such as castor oil and nipple stimulation that may be used by midwives, in order to encourage labour and avoid conventional hospital induction.

This guideline is not intended to make recommendations for or against the use of methods to support natural physiologic changes or to encourage labour. There is a lack of good quality evidence to support many alternative therapies, and therefore a lack of clear understanding of their risks, benefits and efficacy. Many of these alternative therapies have been passed down through traditional midwifery knowledge, and are widely used in the community.

Sweeping the membranes

Cervical membrane sweeping causes the release of endogenous prostaglandins, which augments oxytocin-induced uterine contractions and contributes to cervical changes (16).

Benefits of sweeping membranes:

1. Causes plasma prostaglandin concentrations that are 10% of those in labour – thus possibly improving labour outcomes (29);
2. Possible reduction in induction-to-labour interval and oxytocin use (30);
3. Increased rate of normal vaginal delivery (30);
4. Reduces the number of clients with pregnancies past 41+0 (31 & 32);
5. Sweeping starting at 38weeks reduced the time-to-delivery and resulted in fewer pregnancies past 41+0 weeks (33);
6. Benefits to both nulliparous and multiparous patients. (34)

Potential drawbacks of sweeping membranes:

1. Theoretical risks include premature rupture of membranes, bleeding from an undiagnosed placenta previa and chorioamnionitis. However, there has been no increased incidence of fetal infection or neonatal morbidity (16).
2. Maternal morbidity includes — pain/discomfort during the procedure, bleeding, and contractions not leading to labour within 24hours (35). Miranda, et. al., 2006 RCT found “88% of all women randomized to sweeping reported that they would choose sweeping in the next pregnancy, despite the discomfort.”

The SOGC Guideline for the Management of Pregnancy at 41+0 to 42+0 Weeks states that eight women would need to undergo sweeping of membranes to prevent one induction of labour (35).

RECOMMENDATIONS FOR INTERVENTIONS TO PROMOTE SPONTANEOUS LABOUR:

- Following informed choice discussions midwives may offer alternative therapies
- Offer membrane sweeping, when appropriate, beginning at 38weeks and any gestational age thereafter, following a discussion of risks and benefits to reduce the rate of post-term pregnancy and the need for induction (10)

Options between 41+0 and 42+0 weeks of pregnancy

Expectant Management versus Induction of Labour

The evidence is uncertain regarding an optimal time for planning induction of labour. Studies have not shown a statistically significant decrease in stillbirth rates when induction takes place prior to 42 weeks.

RECOMMENDATIONS REGARDING EXPECTANT MANAGEMENT VERSUS INDUCTION OF LABOUR:

- Prior to 41+0 weeks gestation discuss the risks and benefits of induction of labour versus expectant management, and offer induction of labour anytime between 41 and 42 weeks.
- Midwives are required to refer their clients for a physician consultation visit at 42 weeks.
- Both induction and expectant management remain options after 42 weeks.
- Post-term pregnancy alone is not an indication for transfer of care. The midwife remains the primary care provider in the hospital unless a specific indication for transfer of care arises.
- Home birth remains a choice that midwives can offer up until 43 completed weeks of pregnancy. If a woman chooses to birth at home after 42 weeks, the midwife should ensure that the woman has information about the increased risks and limitations of the home setting in responding to situations that may arise during post-term labour and birth and document this discussion in the antenatal record.
- Midwives need to be aware of their local hospital guidelines regarding postdates pregnancy testing and induction of labour. Standards are variable by institution.
- Emerging evidence about increased risk of stillbirth with increased maternal age has led some care providers to offer women age 40 and over induction of labour as early as 40 weeks

Fetal health surveillance for pregnancies beyond 41+0 weeks

There is a lack of evidence demonstrating that antenatal testing improves perinatal outcomes for uncomplicated pregnancies between 41+0 and 42+0 weeks; however, when a client chooses expectant management most care providers will use some form of post-dates testing (16). Common methods for fetal surveillance include fetal movement counting, non-stress test (NST), biophysical profile, modified biophysical profile (NST and amniotic fluid volume estimation) and contraction stress test.

Fetal Movement Counting – maternal awareness of fetal movement has been associated with good outcomes; however, no specific methods for fetal movement counting have been shown to reduce the PMR or morbidity rates (36).

NSTs – no evidence has shown that this is an effective method to monitor postdates pregnancies. This is due to low sensitivity and low positive predictive value (less than 50%) (36).

Amniotic Fluid Volume – AFV of less than 5cm is associated with adverse perinatal outcomes, but has low sensitivity (11-28%) in predicting morbidity (37-39).

Biophysical profile – high specificity and high negative predictive value (40).

Modified Biophysical profile – resulted in more abnormal findings, but no improvement in neonatal outcomes (40).

No studies have compared or tested specific schedules of post-dates monitoring; however, the protocols for five of the validated post-dates RCTs with low PMRs mainly used a modified biophysical profile 2-3x weekly (18).

RECOMMENDATIONS FOR FETAL HEALTH SURVEILLANCE FOR PREGNANCY BEYOND 41+0 WEEKS:

- Monitoring for expectant management past 41weeks:
  SOGC states "at least one non-stress test and an assessment of amniotic fluid volume" between 41+0 and 42+0 weeks.
  BCPHP recommends daily fetal movement counts, and NST and ultrasound twice weekly to 42 weeks.
- Monitoring for expectant management past 42 weeks (12)
  If a woman chooses to go past 42weeks with extensive informed choice discussions, then NST and AFI at 42 weeks and 3 days followed by daily monitoring thereafter is recommended.

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