Approved by Quality & Patient Care Committee
November 2016

ADVANCED MATERNAL AGE (AMA) AND OUTCOMES

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. **AIM**
   - To provide appropriate antenatal advice and management to a woman ≥ 40 years of age at expected time of birth

2. **PATIENT**
   - Pregnant woman ≥ 40 years of age at expected time of birth.

3. **STAFF**
   - Medical and midwifery staff
   - Genetic Counsellor

4. **EQUIPMENT**
   - Nil

5. **CLINICAL PRACTICE**
   - Discuss increased maternal and fetal risks of pregnancy with AMA
   - Counsel woman sensitively regarding the potential risks associated with AMA, keeping information in perspective
   - Counsel woman regarding her options for aneuploidy screening, and in particular ensure woman's age is taken into account with counselling. The woman can be referred for Genetics Counselling if further information is requested or indicated.
   - Recommend antenatal visits schedule be followed as per nulliparous woman
   - Recommend woman $\geq$ 40 years of age, induction of labour at 39-40 weeks' gestation in view of the increased stillbirth rates in postdates gestations.

6. **DOCUMENTATION**
   - Integrated clinical notes
   - Antenatal clinical record
   - Antenatal card

7. **EDUCATIONAL NOTES**
   - There is a continuum of risk for both women and neonates with rising maternal age, with numerous studies reporting multiple adverse maternal and fetal outcomes associated with AMA
   - An increasing number of women $\geq$ 40 years of age are having babies (4.8% in NSW Mothers and Babies 2013, 7.3% at RHW 2016 financial year). The majority of these women will have uncomplicated pregnancies and births.
   - There are numerous reports in the literature assessing the effect of AMA on pregnancy outcomes, but results are varied

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ADVANCED MATERNAL AGE (AMA) AND OUTCOMES cont'd

- The FASTER trial (2005) studied 36056 women, 1364 who were ≥ 40 years of age, with the following being statistically significant:

	< 35 years of age (% of obstetric complications)	≥ 40 years of age (% of obstetric complications)	Adjusted OR (odds ratio)
fetal loss (10-24weeks)	0.8	2.2	2.4
chromosomal abnormality	0.2	1.9	9.9
congenital anomaly	1.7	2.9	1.7
gestational diabetes	2.9	7.3	2.4
placenta praevia	0.5	1.9	2.8
placental abruption	0.7	1.6	2.3
preterm delivery	7.8	11.8	1.4
low birth weight	5.2	7.5	1.6
caesarean section	21.7	40.5	2.0
perinatal loss	0.3	0.7	2.2

- The FASTER trial (2005) did not show statistical significance for pre-eclampsia. However, a cohort study (of 76000 singleton pregnancies in the UK) published in 2013 (Khalil et al) showed an increased risk of pre-eclampsia for woman ≥ 40 years of age when compared to women < 35 years of age, with an OR 1.49. Other findings from the same cohort study were similar to those found in the FASTER trial
- Other outcomes which are recognised as being associated with AMA, but have limited or no evidence of quantifiable risk, include:
    - hypertension
    - malpresentation at delivery
    - prolonged labour, especially second stage
    - postpartum haemorrhage
- AMA is associated with an increased rate of comorbidities which contribute to maternal and fetal risk such as:
    - obesity
    - higher gestational weight gain
    - pregestational diabetes
    - essential hypertension
    - infertility requiring treatment
    - uterine abnormalities e.g. fibroids
- Miscarriage risk increases with maternal age. Up to 1:4 women will miscarry prior to 35 years of age, whereas as many as 1:2 women will miscarry after 40 years of age. Most miscarriages will occur within the first trimester
- Increase in perinatal loss with AMA is mainly due to increased stillbirths rather than neonatal deaths
- Stillbirth risk increases with maternal age. For women ≥ 40 years of age, the approximate risk of stillbirth at 40 weeks is 1:500 compared with women ≤ 35 years who have a stillbirth risk of approximately 1:1000. This risk is comparable to women ≤ 35 years of age at a gestation at 42 weeks' gestation.
- Nulliparous women have a higher risk of stillbirth at all gestations compared to multiparous women.
- In a recent randomised control trial (Walker et al 2016), induction of labour at 39 weeks' gestation (versus expectant management) in women > 35 years of age, did not increase or decrease the rate of caesarean section and was not associated with negative maternal or neonatal outcomes in the short-term. The trial was not designed or powered to assess the effects of labour induction on stillbirth
- A large retrospective cohort study (Nicholson et al 2006) reported that to balance the risks of caesarean delivery, neonatal intensive care admission, severe maternal perineal trauma and low newborn Apgar's, the optimal time for delivery of a woman ≥ 35 years of age was between 38 weeks and 5 days' gestation and 39 weeks and 6 days' gestation.

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ADVANCED MATERNAL AGE (AMA) AND OUTCOMES cont'd

8. **RELATED POLICIES/ PROCEDURES /CLINICAL GUIDELINES**
   - Trisomy 21 screening, including non-invasive prenatal testing (NIPT)
   - Fetal Growth assessment in Pregnancy Guideline
   - Fetal Movements - Identification and Management of Reduced Patterns
   - Prenatal Testing – Special Tests for your baby during pregnancy NSW Health February 2008
   - ACM Guidelines

9. RISK RATING
   - **Low**

10. NATIONAL STANDARD
   - CC - Comprehensive Care

11. **REFERENCES**

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REVISION & APPROVAL HISTORY
Reviewed and endorsed Maternity Services LOPs 26/9/16
Previously titled *Age and Maternity Outcomes Guideline*
Approved Quality & Patient Safety Committee 18/6/09
Endorsed Obstetrics Clinical Guidelines Group May 2009

FOR REVIEW :

Information for a pregnant woman who is aged 40 years or more at expected time of birth

Congratulations on your pregnancy! Although the majority of women who have babies when they are over 40 years old will have an uncomplicated pregnancy and birth, there are some increased risks compared to women who are under 40 years of age. This leaflet will explain why we offer certain tests and make some particular recommendations to help keep you and your baby/babies safe.

Tests that you may consider in the first half of pregnancy

The chance of a baby having a chromosome problem increases with the mother's age. By the time a woman is 40 years of age, her baby has about a 1:50 chance of a chromosome problem – compared to a woman under 35 years of age who has a chance of about 1:500. Some tests are available to try and detect if your baby is more likely to have a chromosome problem:

- Nuchal translucency(NT) ultrasound and blood test/serum screen(SS) done together between 11-14 weeks
- Non-invasive prenatal screen(NIPS), a blood test, done any time from 10 weeks'

Both of these tests only look for the more common chromosome problems e.g. Down syndrome. The NIPS is more accurate than NT+SS but is more expensive and not currently covered by Medicare.

If these tests suggest that your baby is at higher risk of a problem, you will be referred to the genetic counsellor for discussion about further testing options.

It is recommended that all women have an ultrasound between 18 and 20 weeks of pregnancy to pick up any problems with your baby's anatomy, and the location of the placenta.

Complications that may develop in the second half of pregnancy

Gestational Diabetes: Research has shown that women over 40 are more likely to develop diabetes during their pregnancy (about 7%) therefore we will recommend that you have an early (10-14 weeks) Glucose Tolerance test (GTT). If the early test is negative, we recommend a repeat GTT test at 26-28 weeks. A positive test means we can recommend an appropriate diet, exercise and treatment as early as possible to minimise complications.

High Blood Pressure (Pre-eclampsia): Developing high blood pressure in the second half of pregnancy is more common in women over 40 years of age.

Fetal Growth Restriction (FGR): Having a baby that is smaller than expected is also more common in women over 40 years of age.

To monitor both your blood pressure and growth of your baby, antenatal visits will be recommended at the same frequency as a first time mum of any age (even if this is NOT your first baby).

Complications that may develop around your due date

Research has shown that once you have reached 40 weeks, the risk of stillbirth is slightly increased (1:500) compared to women under 35 years old (1:1000). We therefore recommend that you have an induction of labour by 40 weeks. In order to try and avoid the need for induction we will offer you regular "stretch and sweeps" of the membranes from around 38 weeks to increase the chance of you coming into labour yourself.

Other Health Issues

As you get older, you are more likely to have other health issues (e.g. being overweight, high blood pressure, type 2 diabetes, infertility, fibroids) which may impact the health of your pregnancy. Your midwife or doctor may therefore recommend other tests, or pregnancy/birth plans that relate to these health issues

Your midwife or doctor will be able to discuss any of the issues in this leaflet if you would like more information.