

HIGH ORDER MULTIPLE PREGNANCY – ANTENATAL CARE

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

1. AIM

- Assessment and management for woman with high order multiple pregnancy (HOMP)

2. PATIENT

- Woman pregnant with three or more live fetuses

3. STAFF

- Medical and midwifery staff
- Sonographers
- Social workers
- Genetic counsellors

4. EQUIPMENT

- Nil

5. CLINICAL PRACTICE

At first presentation

- Ensure good quality, accurate ultrasound has been performed to establish gestational age, estimated due date, chorionicity and amnionity. A repeat ultrasound may be required, ideally prior to ten weeks gestation
- Refer woman for information and counselling regarding HOMP to the Department of Maternal Fetal Medicine (MFM) as per '*Referral to the Department of Maternal Fetal Medicine (MFM: Fetal indications*' Clinical Business Rule (CBR). Counselling may include non-directive discussion about multifetal reduction and neonatal consultation regarding perinatal outcomes
- Discuss options for aneuploidy screening.
 - Refer to RHW genetic counsellor for clarification about options, as not all available options will be interpretable in these pregnancies (see educational notes)
- Refer for early morphology ultrasound +/- aneuploidy screen between 11⁺¹ and 13⁺⁶ weeks gestation
- Perform amniocentesis and CVS in women with multifetal gestation who desire definitive testing for genetic anomalies. The procedure related loss rates for both tests are similar (1-1.8%). These are slightly increased compared to singleton gestation.
- Recommend folic acid, iron, calcium and iodine supplements:
 - folic acid 500 mcg/day
 - calcium 1.2g/day
 - elemental iron 80-100mg/day
 - iodine 150mcg/day
- Recommend low dose aspirin (100-150mg nocte) prior to 16 weeks gestation for pre-eclampsia prophylaxis
- Consider dietician referral for Body Mass Index (BMI) < 18 or > 30

CLINICAL POLICIES, PROCEDURES & GUIDELINES

Approved by Quality & Patient Care Committee
21 September 2017

HIGH ORDER MULTIPLE PREGNANCY – ANTENATAL CARE cont'd

Antenatal Care (Department of MFM)

- Perform ongoing serial growth and wellbeing ultrasounds according to the number of fetuses and chorionicity:
 - Triplets (from 18-20 weeks)
 - Trichorionic Triamniotic (TCTA) - 3 weekly
 - Monochorionic Diamniotic (MCDA) twin pair – 2 weekly
 - Monochorionic Monoamniotic (MCMA) twin pair/triplets - 1-2 weeks from 16 weeks gestation
- Perform fetal morphology ultrasound at 18-20 weeks with transvaginal cervical length assessment
- Review woman in MFM clinic:
 - at least once during first trimester
 - every 4 weeks thereafter until 18-20 week morphology ultrasound
 - every 2-3 weeks from morphology ultrasound until 28 weeks gestation
 - every week from 28 weeks gestation until birth
- Arrange routine neonatal review for woman with HOMP prior to 23 weeks gestation to discuss management in the event of preterm labour, and clearly document discussion and plan in medical record
- Perform routine screening for gestational diabetes at 26-28 weeks, or earlier if additional risk factors
- Arrange antenatal lactation clinic appointment after 24 weeks gestation in Maternity Outpatients department
- Consider consultation with social work and with perinatal mental health
- Recommend attendance at multiple birth antenatal education classes at RHW
- Advise woman of NSW Multiple Birth Association and other support networks

Birth planning

- Commence birth planning by the 24-week antenatal visit including:
 - counselling about increased likelihood of spontaneous preterm labour
 - mode of birth
 - antenatal consultation with neonatal team who will provide written information regarding outcomes of prematurity
 - recommendation of antenatal steroids for elective caesarean section
- Advise woman birth via elective caesarean section is recommended at approximately:
 - 35 weeks gestation in an otherwise uncomplicated TCTA triplet pregnancy
 - 34-35 weeks gestation in an otherwise uncomplicated MC or DC triplet pregnancy
 - 32-33 weeks in a quadruplet pregnancy
 - NICE States: Plan birth by caesarean section for uncomplicated TCTA or DCTA triplet pregnancy by 35+6. For MCTA or triplet pregnancies involving a shared amnion timing of birth will be individualised

6. DOCUMENTATION

- Medical record
- Antenatal card

HIGH ORDER MULTIPLE PREGNANCY – ANTENATAL CARE cont'd

7. EDUCATIONAL NOTES

- No data is available for serum screening for higher-order multiple pregnancies. Experience with Nuchal Translucency (NT) measurements is limited but studies suggest that NT measurement is feasible. Screening using only maternal age and NT has been validated for Down syndrome and Trisomy 18
- HOMP are most commonly trichorionic triamniotic (TCTA), three fetuses each with their own placenta, or dichorionic triamniotic (DCTA) monochorionic twin pair and “singleton”. Monochorionic high order multiples (three fetuses sharing one placenta) are extremely rare.
- HOMP are associated with a very high likelihood of preterm birth, increased fetal/neonatal and maternal complications.
- Maternal complications:
 - hypertensive disease of pregnancy
 - gestational diabetes
 - anaemia
 - cholestasis
 - antepartum haemorrhage
 - risks associated with caesarean birth
 - postpartum haemorrhage
 - postpartum depression
- Neonatal complications:
 - preterm birth
 - small for gestational age
- For triplets the mean gestational age at birth is 32 weeks.
- Epidemiological studies suggest that the nadir for perinatal mortality for triplet pregnancies occurs at 34-35 weeks of gestation. However, there are no prospective trials to test the hypothesis that elective birth at this gestation improves outcomes.
- The role of cervical screening for risk of preterm birth is not determined. Interventions, such as prophylactic cerclage, routine hospitalization, bed rest, prophylactic tocolytics, and prophylactic Arabin pessary, have not been proven to decrease neonatal morbidity or mortality and, therefore, should not be used in women with multifetal gestations.
- Do not use fetal fibronectin testing alone to predict the risk of preterm birth in triplet pregnancy

Multifetal Reduction (MFR)

- This involves the termination of one or more fetuses in a multiple pregnancy in the first trimester or early second trimester. It is usually performed at 11-14 weeks by intracardiac injection of potassium chloride under ultrasound guidance.
- It prolongs the gestational age at birth by an average of 3-4 weeks.
- In pregnancies where a MFR has taken place before 20 weeks, registration of the demised fetus as a stillbirth is not required.
- The most common scenario is the reduction of a TCTA pregnancy to DCDA twins.
- There are no randomised controlled trials (RCTs) to evaluate the risks and benefits of MFR. The decision to accept or decline MFR rests solely on the woman's preference and counselling should be non-directive.
- A systematic review calculated that in TCTA triplet pregnancies, MFR to twins compared with expectant management results in:
 - Higher rate of pregnancy loss before 24 weeks (8% vs 4%)
 - Lower rate of preterm birth < 32 weeks (10% vs 27%)
 - Higher median birth weight (2300g vs 1760g)
 - Prolongation of pregnancy by about 3 weeks (36 versus 33 weeks)
 - Number needed to treat: Seven MFR would be needed to prevent one early preterm delivery < 32 weeks

- Number needed to harm: 26 MFRs would result in one additional pregnancy loss < 24 weeks

HIGH ORDER MULTIPLE PREGNANCY – ANTENATAL CARE cont'd

- Assuming similar survival and disability rates from premature singletons, MFR could reduce the risk of severe disability from about 1.5% to 0.6%.
- However more recent case series have not found a difference in survival with MFR, despite a reduction in prematurity.
- Studies using standard psychological tests to assess the emotional state of the woman after MFR have not identified any serious long-term psychological sequelae

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Twin pregnancy – Antenatal Care guideline
- Twin pregnancy - Intrapartum Vaginal Birth guideline
- Monoamniotic Twins, Management
- Referral to the Department of Maternal Fetal Medicine: Fetal Indications
- Corticosteroids for woman at risk of preterm birth or with a fetus at risk of respiratory distress – Antenatal
- Magnesium sulphate prior to preterm birth for fetal neuroprotection
- Hypertension – Management in pregnancy
- Severe and/or urgent hypertension in pregnancy guideline
- Small for gestational age (SGA) fetus screening and management – Singleton fetuses
- Anaemia and haemoglobinopathies in pregnancy
- Gestational diabetes mellitus management (GDM) policy SESLHDPD/282

9. RISK RATING

- Low

10. NATIONAL STANDARD

- Standard 2 – partnering with consumers
- Comprehensive Care - CC

11. REFERENCES

1. Papageorghiou AT et al. Risks of miscarriage and early preterm birth in trichorionic high order multiple pregnancies with embryo reduction versus expectant management: new data and systematic review. 2006. Human Reproduction 21(7): 1912-1917
2. Multifetal gestations: twin, triplet, and higher-order multifetal pregnancies. ACOG Practice Bulletin No. 231, Obstet Gynecol. 2021;137(6)
3. NICE. Twin and triplet pregnancy. NICE guideline [NG137]. 2019
4. Am J Obstet Gynecol. 2016 May;214(5):641. Severe acute maternal morbidity in multiple pregnancies: a nationwide cohort study. Witteveen T, Van Den Akker T, Zwart JJ, Bloemenkamp KW, Van Roosmalen J.
5. J Matern Fetal Neonatal Med. 2016 Mar;29(6):938-43. doi: 10.3109/14767058.2015.1024649. Epub 2015 Apr 22. Obstetrical and neonatal outcomes of triplet births - spontaneous versus assisted reproductive technology conception. Morency AM, Shah PS, Seaward PG, Whittle W
6. Morlando M, Ferrara L, D'Antonio F, Lawin-O'Brien A, Sankaran S, Pasupathy D, Khalil A, Papageorghiou A, Kyle P, Lees C, Thilaganathan B, Bhide A Dichorionic triplet pregnancies: risk of miscarriage and severe preterm delivery with fetal reduction versus expectant management. Outcomes of a cohort study and systematic review. 1. BJOG. 2015 Jul;122(8):1053-60. doi: 10.1111/1471-0528.13348. Epub 2015 Apr 8.
7. Fetal Diagn Ther. 2013;34(4):199-205. Trichorionic and dichorionic triplet pregnancies at 10-14 weeks: outcome after embryo reduction compared to expectant management. Chaveeva P, Kosinski P, Puglia D, Poon LC, Nicolaidis KH.
8. van de Mheen L, Everwijn SM, Knapen MF, Oepkes D, Engels M, Manten GT, Zondervan H, Wirjosoekarto SA, van Vugt JM, Erwich JJ, Nij Bijvank SW, Ravelli A, Heemelaar S, van Pampus MG, de Groot CJ, Mol BW, Pajkrt E. The effectiveness of multifetal

- pregnancy reduction in trichorionic triplet gestation. *Am J Obstet Gynecol.* 2014 Nov;211(5): 536.e1-6.
9. RANZCOG. College statement. 2014. Management of Monochorionic twin pregnancy. *C- Obs* 42
 10. Dodd JM, Dowswell T, Crowther CA. Reduction of the number of fetuses for women with a multiple pregnancy. *Cochrane Database of Systematic Reviews* 2015, Issue 11. Art. No.: CD003932. 10.1002/14651858.CD003932. pub3.
 11. Perinatal outcomes in multifetal pregnancy following fetal reduction Neda Razaz, Tehila Avitan, Joseph Ting, Tracy Pressey K.S. Joseph *CMAJ* 2017 May 8;189: E652-8. doi: 10.1503/cmaj.160722

REVISION & APPROVAL HISTORY

Endorsed RHW Safety and Quality Committee 15.12.22
Reviewed and endorsed Maternity Services CBRs 12/12/22
Reviewed and endorsed Maternity Services LOPs 12/9/17
Approved Quality & Patient Safety Committee 15/10/09
Obstetrics Clinical Guidelines July 2009

FOR REVIEW: DECEMBER 2027