Society for Maternal-Fetal Medicine

Consult Series #60

MANAGEMENT OF PREGNANCIES RESULTING FROM IN-VITRO FERTILIZATION

MOST of these pregnancies are **UNCOMPLICATED**

in the U.S. **Assisted Reproductive Technology** accounts for 1.6% of all infants & 18.3% of all multi-birth infants

GENETICS

- ↑ rate of de-novo chromosomal abnormalities reported in ICSI pregnancies compared with the general population
- other factors that may ↑ risk of chromosomal anomalies:
  - Advanced Maternal Age
  - polycystic ovary syndrome
  - severe male & female factor infertility
- Patients with reduced ovarian reserve & primary ovarian insufficiency have ↑ risk of being full mutation or premutation carriers of fragile X & typically undergo *FMR1* gene testing before IVF

Suggest genetic counseling be offered to all patients undergoing or who have undergone IVF +/- ICSI

PREIMPLANTATION GENETIC TESTING (PGT)

should be offered for monogenetic disorders with the transfer of only embryos carrying the normal X chromosome

TYPES OF PGT

recommend offering confirmatory diagnostic test in pregnancy

PGT-A — For de novo aneuploidies
Does not replace prenatal screening/diagnosis

PGT-M — For monogenetic disorders
For couples with previous offspring affected by single-gene disorders or who have undergone carrier screening with both partners + for a mutation associated with a genetic disease

PGT-SR — For structural [chromosomal] rearrangements
when one partner is a carrier of a balanced translocation or a deletion or duplication

Regardless of whether PGT has been performed, recommend all patients who have achieved pregnancy with IVF be offered prenatal genetic screening & diagnostic testing via CVS or amniocentesis

1ST TRIMESTER SCREENING

- increased ↑ risk of false-positive results for aneuploidies
- low fetal fraction
- higher rates of failed cfDNA compared with naturally occurring pregnancies
  - not a risk factor for failed resuts on 2nd draw

Recommend that the accuracy of first-trimester screening, including cfDNA for aneuploidy, be discussed with patients undergoing or who have undergone IVF

MULTIFETAL PREGNANCY

Recommend counseling be offered regarding the option of multifetal pregnancy reduction

multifetal pregnancy reduction has been shown to significantly ↓ risks of preterm birth, neonatal morbidity, & maternal complications

are risks for CONGENITAL ANOMALIES increased ?

- meta-analyses demonstrate associations betw/ IVF/ICSI & congenital malformations
  - unclear if due to infertility, factors associated with the procedure, or both

✳ data unclear

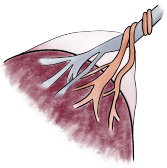
Suggest fetal echo be offered for pregnancies achieved with IVF/ICSI ✳

Recommend detailed OB ultrasound exam (CPT 76811) for pregnancies achieved with IVF/ICSI

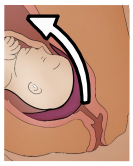
PLACENTAL ANOMALIES

Recommend careful exam of placental location, shape, & cord insertion at time of detailed fetal anatomy, with eval for vasa previa

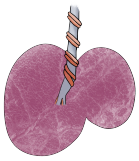
consider TVUS to rule out vasa previa in all IVF pregnancies with



velamentous cord insertion



resolved placenta previa



Succenturiate or bilobed placenta

*reassess at 32 weeks

PRETERM BIRTH

- a meta-analysis of singleton pregnancies demonstrated that IVF is associated w/ higher odds of preterm delivery, low birthweight compared w/ naturally occurring pregnancies
- such risks are more than doubled in IVF twin gestations
- subfertility is also a major risk factor for prematurity

Although visualization of the cervix at the anatomy assessment is recommended, we do **NOT** recommend **serial cervical length** assessment for IVF pregnancies

Discontinuation of progesterone supplementation initiated for the sole purpose of IVF is recommended **by 12 weeks**

FETAL GROWTH RESTRICTION

an increased risk of small for gestational age (SGA) infants is documented in singleton IVF pregnancies

Suggest an assessment of fetal growth in the 3rd trimester for IVF pregnancies

*serial growth US **NOT** recommended

ASPIRIN

Recommend **low-dose aspirin** if IVF pregnancy + one or more additional risk factors for preeclampsia

STILLBIRTH

IVF pregnancies have a 2 to 3- fold increased risk of stillbirth even after controlling for maternal age, parity, & multifetal gestations

Suggest weekly antenatal fetal surveillance beginning by 36⁰/₇ weeks of gestation for IVF pregnancies

DELIVERY TIMING

It is unknown whether elective delivery at 39 weeks reduces the risks of maternal morbidity & improves perinatal outcomes in IVF pregnancies compared with expectant management

Recommend shared decision-making betw/ patients & healthcare providers when considering induction of labor at 39 weeks