Isolated Amniotic Fluid Disorders

Goals
- Prenatal diagnosis of fetal structural or chromosomal abnormalities
- Diagnose and manage maternal disease
- Decrease perinatal morbidity and mortality

Definition
- Isolated amniotic fluid disorders are defined as abnormal amniotic fluid volumes in a pregnancy with no other associated medical co-morbidities (i.e. diabetes, hypertension, other), IUGR or other known etiology for the amniotic fluid aberration.

Diagnosis

For singleton pregnancies:
- Gestational age < 24 weeks:
  - Oligohydramnios deepest vertical pocket (DVP) < 2cm
  - Polyhydramnios DVP > 8cm

- Gestational age ≥ 24 weeks:
  - AFI – calculated by dividing the uterus into four quadrants and measuring the deepest vertical pocket (free of fetal parts and umbilical cord) in each quadrant and adding the four measurements.

<table>
<thead>
<tr>
<th>AFI</th>
<th>Description</th>
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<tbody>
<tr>
<td>&lt; 5 cm</td>
<td>oligohydramnios</td>
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<tr>
<td>5-8 cm</td>
<td>borderline</td>
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<tr>
<td>8-24 cm</td>
<td>normal</td>
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<tr>
<td>≥ 24 cm</td>
<td>Polyhydramnios</td>
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<tr>
<td></td>
<td>24.0-29.9 mild</td>
</tr>
<tr>
<td></td>
<td>30.0-34.9 moderate</td>
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<tr>
<td></td>
<td>≥ 35.0 severe</td>
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</tbody>
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For multifetal pregnancy, amniotic fluid volumes are measured by DVP.
- DVP < 2cm - oligohydramnios
- DVP ≥ 8cm - polyhydramnios
Management of Isolated Oligohydramnios (AFI < 5cm- for singleton pregnancy)
- Obtain history of leaking fluid, exam as indicated, consider evaluation for preeclampsia, consider amniocentesis to rule out PPROM
- Perform BPP with NST at the time of diagnosis
- Ultrasound evaluation of fetal kidneys, bladder and estimated fetal weight
  - Consider amnioinfusion for improved visualization
- Maternal hydration – 2 liters PO or IV as clinically appropriate

> 24 weeks - < 37 weeks
- Inpatient management
- Daily NST
- Twice weekly BPP

≥ 37 weeks
- Delivery recommended if AFI persistently < 5 cm for more than 24-48 hours despite IV or PO fluid hydration.
- Consider delivery if AFI < 8 cm for more than 24-48 hours despite outpatient fluid hydration.
- Delivery recommended if DVP < 2 cm.
- DVP ≥ 2cm, daily NST, twice weekly BPP acceptable.
- If the patient is not delivered and oligohydramnios persists, but is stable with a DVP ≥ 2 cm, consult MFM regarding management.

≥ 39 weeks
- Delivery with AFI <5cm

**Delivery is not indicated for resolved isolated oligohydramnios prior to 39 weeks.

Management of Isolated Borderline Amniotic Fluid Volume
- Obtain history of leaking fluid, exam as indicated
- BPP with NST at the time of diagnosis
- Ultrasound evaluation of fetal kidneys, bladder and estimated fetal weight
- Maternal hydration as outpatient
- Repeat AFI within 1 week
  - Normal AFI, no further testing indicated
  - Oligohydramnios, follow as outlined above
  - Borderline, repeat AFI within 1 week
    - If borderline amniotic fluid volume is stable for ≥ 2 weeks, no further AFI assessment needed
- Gestational age ≥ 37 weeks: consider delivery if AFI < 8 cm for more than 24-48 hours despite outpatient fluid hydration.
Polyhydramnios

Diagnostic work-up of polyhydramnios:
- Screening for gestational diabetes. Consider repeat glucose screen if over one month since prior screening.
- Detailed fetal anatomical evaluation assessing for presence of other anomalies including cardiac and CNS anomalies, fetal hydrops, signs of aneuploidy, impaired fetal swallowing, congenital infection.
- Idiopathic polyhydramnios is a diagnosis of exclusion.

Management of Isolated Polyhydramnios
- Obtain history regarding diabetes, Rh immunization, family history of myotonic dystrophy, inborn errors of metabolism, maternal discomfort
  - Genetic counseling if history positive for genetic disorders
- Consider maternal serum screening for syphilis for at risk patients
- Consider aneuploidy screening, if not already performed.
- Ultrasound evaluation of structural anomalies
  
  *SMFM Consult Series “Currently, there are no data to support diagnostic amniocentesis for apparently isolated polyhydramnios, although amniocentesis with chromosomal microarray analysis should be made available to all pregnant women.”*
- Consider amniocentesis for microarray:
  - AFI > 30cm with unexplained polyhydramnios (eg not Diabetes)
  - Structural anomaly
  - Concerning first or second trimester aneuploidy screen
  - IUGR
  - Gestational age < 24 weeks
- If amniocentesis performed
  - Microarray
  - Myotonic dystrophy if positive family history or fetal hypotonia on US
  - Inborn errors of metabolism (Gaucher disease, gangliosidoses, mucopolysaccharidoses, etc.) if positive family history or high risk ethnicity (Ashkenazi Jews, Amish, consanguinity)

Treatment of polyhydramnios
- Consider amnioreduction when severe polyhydramnios leads to maternal respiratory compromise, severe discomfort or both as per SMFM Consult series recommendation (2018).
- Indomethacin should not be used for sole indication of treatment of polyhydramnios.
Role of antenatal testing in setting of isolated polyhydramnios

Antenatal testing may be clinically indicated for a myriad of maternal and fetal complications, see Antenatal Fetal Surveillance for details. The following recommendations pertain solely to isolated polyhydramnios without associated maternal diabetes, fetal anomaly, etc.

- Mild polyhydramnios (24.0-29.9 cm)- Antenatal fetal surveillance not required.
- There are no clear recommendations regarding efficacy of testing in the setting of moderate or severe polyhydramnios. Recommend initiation of antenatal testing twice weekly when moderate or severe polyhydramnios.

Timing of Delivery in Isolated Polyhydramnios

- Mild polyhydramnios- labor should be allowed to occur spontaneously at term and if planned, should not occur less than 39 0/7 weeks in the absence of other indications (SMFM Consult Series).
- Consider delivery for polyhydramnios at 39 weeks. Moderate or severe polyhydramnios consider delivery beyond 37 0/7 weeks.
- In presence of severe isolated polyhydramnios, recommend delivery at a tertiary care center (SMFM Consult Series).

Special scenario: **History of isolated polyhydramnios, subsequently resolved:**
If the amniotic fluid volume has been normal on two or more consecutive occasions, and the patient has recently had a negative diabetes screen, it is reasonable to discontinue antenatal testing if other indications for testing are not present.

Twins with amniotic fluid disturbances – refer to MFM.
References:


