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COLUMBIA UNIVERSITY MEDICAL CENTER
DEPARTMENT OF OBSTETRICS AND GYNECOLOGY
OB/GYN ULTRASOUND PRACTICE GUIDELINES

TITLE: Guidelines for outpatient antepartum fetal surveillance

PURPOSE: To describe the types of testing performed in our units and their indications
To outline the steps taken for abnormal results

APPLIES TO: Department of Ob/Gyn ultrasound units including satellite sites

INDICATIONS FOR ANTENATAL SURVEILLANCE (BPP +/- NST):

Condition	Initiate Testing (GA in weeks)	Frequency of Testing
Abruption	At diagnosis	Twice weekly
Advanced maternal age > 40 years [1]	32-34 [1]	Weekly
Amniocentesis ≥ 24 weeks	Post-procedure	NST once
Amniotic fluid abnormalities MVP < 2 (in singletons or dichorionic multiples) MVP ≥ 2 but AFI < 5 (in singletons) AFI ≥ 24 (in singletons) MVP > 8 (in singletons or dichorionic multiples)	At diagnosis [2]	Twice weekly with NST Twice weekly with NST Weekly [3] Weekly [3]
Antiphospholipid syndrome	32	Weekly
Chronic hypertension	32-34	Weekly
Chronic renal disease	32	Weekly
Cholestasis	At diagnosis	Weekly; 2 x weekly if bile acids > 40
Maternal cyanotic heart disease	28	Weekly
Decreased fetal movement	At diagnosis	Once with NST
Diabetes mellitus (type 1 or 2)	32 (earlier if poor control or end-organ damage)	Twice weekly [3]
Gestational diabetes (on medication or poor control)	32	Twice weekly [3]
Gestational diabetes (on diet and good control)	40	Weekly
Gestational hypertension	At diagnosis	Weekly
Hyperthyroidism (poor control)	32	Weekly
Hemoglobinopathies (SS, SC, S-thal)	32	Weekly
Fetal growth restriction in SINGLETONS (EFW < 10th or AC < 10th) Normal Dopplers Elevated umbilical artery S:D AEDF umbilical artery REDF umbilical artery	At diagnosis [2] At diagnosis [2] At diagnosis [2] At diagnosis [2]	Weekly 2 x weekly with NST [3] At least 2 x weekly with NST [3] Per MFM

Fetal growth restriction in MULTIPLES	At diagnosis [2]	Per MFM
Isoimmunization	At diagnosis	Weekly MCA Dopplers
Known or suspected fetal anomaly	32-34 weeks	Weekly
Multiple gestations Dichorionic twins Trichorionic triplets Uncomplicated monochorionic multiples Complicated monochorionic multiples Monoamniotic multiples	36 32 > 16 weeks > 16 weeks When intervention desired	Weekly Weekly q 2 wks 16-32 wks; weekly > 32 weeks Per MFM Per MFM
Obesity with BMI > 35[4]	34 [4]	Weekly
Post EDC pregnancy	41	Twice weekly [3]
Preeclampsia	At diagnosis	Twice weekly
Prior intrauterine fetal demise (unexplained)	34 weeks (earlier if prior loss <34 weeks)	Weekly
Systemic lupus erythematosus (active disease)	28	Weekly
Thrombophilia with poor OB history	32	Weekly

[1] Consider testing AMA 35-39 beginning at 36 weeks
[2] If intervention for fetal indications is desired
[3] Strongly consider EFM/NST along with US testing
[4] Consider testing BMI 30-34 beginning at 36 weeks

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ADDITIONAL CONSIDERATIONS / RECOMMENDATIONS:

1. No single antenatal test (NST alone vs BPP with NST vs BPP without NST) has been proven superior for all testing indications;
2. When available, NST with BPP should be considered in conditions with increased incidence of fetal heart rate abnormalities (ie decreased fetal movement > 32 weeks, oligohydramnios, fetal growth restriction, abnormal fetal Dopplers, pregestational diabetes) OR in conditions where ultrasound screening may have less sensitivity (ie isoimmunization > 36 wks);
3. The list of indications is not meant to be restrictive and providers may order testing for additional diagnoses at their discretion;
4. The listed gestational age at initiation of testing and listed frequency of testing are suggested in the setting of isolated diagnosis; if multiple indications for testing are present, earlier initiation of testing and / or increased frequency of testing may be considered;
5. Evaluation and antenatal testing may be more appropriately performed on the labor unit in certain circumstances (i.e. suspicion for active preterm labor, active vaginal bleeding, severe HTN, maternal hemodynamic instability, severe alterations in blood glucose, any case in which continuous / prolonged fetal monitoring is necessary);
6. All NSTs should be reviewed by a physician before the patient leaves the unit;

7. If any of the findings listed below are noted at the time of antenatal testing, the covering physician should be notified **BEFORE** the patient leaves the unit:

- Signs / symptoms of active preterm labor
- Maternal vaginal bleeding
- Elevated blood pressures (>140 systolic or >90 diastolic)
- Signs of maternal hemodynamic instability
- Severe alterations in blood glucose (<60 or > 200)
- Fetal heart rate < 110 or $\geq$ 160 bpm
- BPP results less than 8/8-10
- AFI < 5 or $\geq$ 24, or MVP < 2 or $\geq$ 8

References:

ACOG Practice Bulletins: Antepartum Fetal Surveillance #145 2014 Gestational diabetes #137 2015 Multifetal Gestations #144, 201 Management of Stillbirth #102 2009 Antiphosphoplipid Syndrome #132 2012 Fetal Growth Restriction #134 2013 Inherited Thrombophilias #138 2013 Obesity in Pregnancy #156 2015 Pregestational diabetes mellitus #60 2005

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