In Utero Resuscitation for Category II and Category III FHR Tracings

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- ✓ Recheck the FHR pattern 15- 20 min after each intervention.
- ✓ THE PRESENCE OF FHR ACCELERATIONS (WHETHER SPONTANEOUS OR ELICITED) OR MODERATE FHR VARIABILITY OR BOTH ARE HIGHLY PREDICTIVE OF NORMAL FETAL ACID-BASE STATUS.

☐ Change maternal position
- Left or right lateral
- Knee-chest

☐ Fluid bolus: 500-1000 ml lactated Ringer's solution IV over 20 min (except in women at risk for pulmonary edema)

☐ Decrease or stop infusion of oxytocin

☐ If tachysystole is present, consider administration of terbutaline 0.25 mg SQ or IV in patients with no contraindication.

☐ If maternal hypotension is present, which may occur in association with an epidural anesthetic, consider ephedrine in a 5 mg bolus (or anesthesia consult)

☐ Perform cervical exam:
- Assess progress of labor
- Assess for umbilical cord prolapse
- Place fetal scalp electrode if the FHR tracing is of suboptimal quality
- Perform digital fetal scalp stimulation to assess for FHR acceleration
  - Vigorously rub the fetal scalp for 15 sec using an examining finger
  - Following stimulation, acceleration in the FHR of at least 15 bpm above baseline, lasting at least 15 sec, is associated with a low prevalence of fetal acidemia
- Consider vibro-acoustic stimulation as an alternative method of fetal stimulation that does not require vaginal examination
  - Apply a vibro-acoustic stimulator to the abdominal wall for 5 seconds
  - After the stimulus, acceleration in the FHR of at least 15 bpm above baseline, lasting at least 15 sec, is associated with a low prevalence of fetal academia

☐ For patients without a history of Cesarean delivery, consider amnioinfusion if recurrent deep, variable decelerations are present: place an IUPC and administer a bolus of 500 ml of warmed normal saline or D5 lactated Ringer's solution over 30 min followed by a continuous infusion at 200 ml/hr

Figure 1. Management of category II fetal heart tracings

FIGURE 1
Algorithm for management of category II fetal heart rate tracings

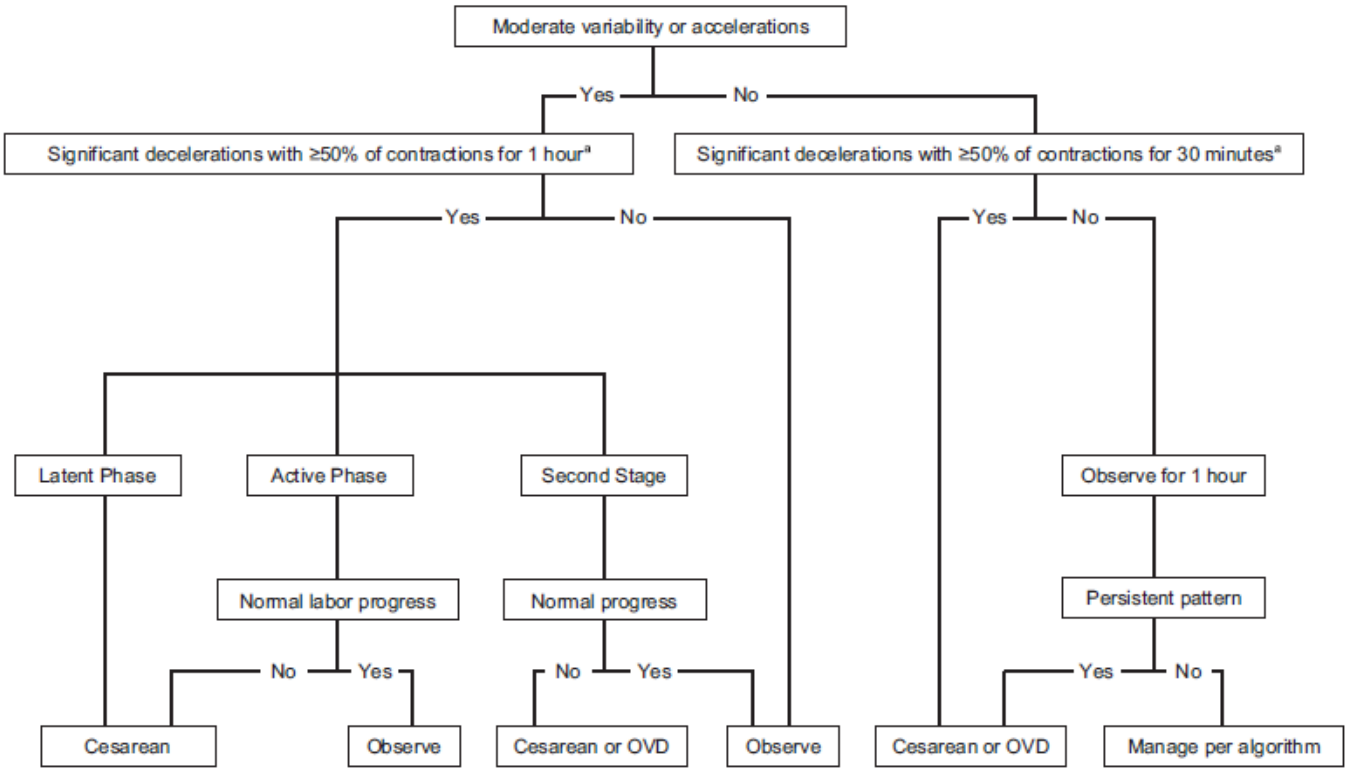

Figure 2. Clarifications for Figure 1 algorithm

TABLE
Management of category II fetal heart rate patterns: clarifications for use in algorithm

1. Variability refers to predominant baseline FHR pattern (marked, moderate, minimal, absent) during a 30-minute evaluation period, as defined by NICHD.
2. Marked variability is considered same as moderate variability for purposes of this algorithm.
3. Significant decelerations are defined as any of the following:
   - Variable decelerations lasting longer than 60 seconds and reaching a nadir more than 60 bpm below baseline.
   - Variable decelerations lasting longer than 60 seconds and reaching a nadir less than 60 bpm regardless of the baseline.
   - Any late decelerations of any depth.
   - Any prolonged deceleration, as defined by the NICHD. Due to the broad heterogeneity inherent in this definition, identification of a prolonged deceleration should prompt discontinuation of the algorithm until the deceleration is resolved.
4. Application of algorithm may be initially delayed for up to 30 minutes while attempts are made to alleviate category II pattern with conservative therapeutic interventions (eg, correction of hypotension, position change, amnioinfusion, tocolysis, reduction or discontinuation of oxytocin).
5. Once a category II FHR pattern is identified, FHR is evaluated and algorithm applied every 30 minutes.
6. Any significant change in FHR parameters should result in reapplication of algorithm.
7. For category II FHR patterns in which algorithm suggests delivery is indicated, such delivery should ideally be initiated within 30 minutes of decision for cesarean.
8. If at any time tracing reverts to category I status, or deteriorates for even a short time to category III status, the algorithm no longer applies. However, algorithm should be reinstituted if category I pattern again reverts to category II.
9. In fetus with extreme prematurity, neither significance of certain FHR patterns of concern in more mature fetus (eg, minimal variability) or ability of such fetuses to tolerate intrapartum events leading to certain types of category II patterns are well defined. This algorithm is not intended as guide to management of fetus with extreme prematurity.
10. Algorithm may be overridden at any time if, after evaluation of patient, physician believes it is in best interest of the fetus to intervene sooner.

FHR, fetal heart rate; *NICHD*, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development.

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