

Basics of Fetal Monitoring

Anesthetic Pearls: Anesthetic Implications and Management of Fetal Monitoring

Basics of Fetal Monitoring

1. Baseline heart rate (normal 120-160 beats/min, accelerates with stimulation)
2. Beat-to-beat variability
3. Periodic patterns (accelerations / decelerations)
4. Uterine activity

Abnormalities of fetal heart rates (significance)

1. Fetal tachycardia
 - A. Maternal fever, sepsis, thyrotoxicosis
 - B. Maternal drug therapy with tocolytics (Terbutaline, Beta-2-receptor agonists, Ca²⁺-channel blockers), Atropine, Ephedrine
 - C. Chronic fetal asphyxia (utero-placental insufficiency)
2. Fetal bradycardia
 - A. Acute fetal asphyxia
 - B. Fetal acidosis
 - C. Periodic bradycardia with head compression, cord compression, and utero-placental insufficiency (see section on decelerations)
 - D. Local anesthetic toxicity from paracervical block
 - E. Maternal Beta-blockers
 - F. Hypothermia
 - G. Congenital AV-block or CMV infection

Factors decreasing beat-to-beat variability

1. Fetal CNS hypoxia and acidosis
2. Narcotics
3. Barbiturates
4. Anticholinergics
5. Local anesthetics
6. Benzodiazepines
7. Inhalational agents

**** Ephedrine & Neosynephrine increase beat-to-beat variability**

