ELECTRONIC FETAL MONITORING

PURPOSE: To provide a guideline for the management of patients undergoing fetal monitoring using an external or internal electronic fetal heart rate (FHR) and uterine activity monitor.

SUPPORTIVE DATA: The recommendations herein are intended to serve as a guideline and should not be construed as indicating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations of institution or practice.

Electronic Fetal Monitoring (EFM) is a tool that provides data for evaluation of fetal heart rate and uterine activity.

A fetal scalp electrode should not be used in conditions in which the risk is expected to exceed the benefit: Examples may include patients with HIV, Hepatitis B, or Hepatitis C infection; patients with genital herpes; placenta previa; face presentation or other contraindications to vaginal delivery.

Fetal monitoring is performed by physicians, midwives, and nursing personnel trained in fetal heart rate and uterine activity monitoring and interpretation.

The normal FHR is 110-160 per minute but may vary depending upon the patient's condition (e.g. mother is febrile or hypovolemic).

ASSESSMENT:

1. Assess FHR as follows:
   - If no risk factors are present:
     - A minimum of every 30 minutes in the active phase of the first stage of labor
     - A minimum of every 15 minutes in the second stage of labor
   - If risk factors are present:
     - A minimum of every 15 minutes in the active phase of the first stage of labor
     - A minimum of every 5 minutes in the second stage of labor
   - Place fetal monitor on patient as soon as possible upon arrival to the operating room
2. Document the following:
   - Hourly unless ordered otherwise
   - Before each dose increase during oxytocin induction or augmentation
   - Every 30 minutes during the active pushing phase of the second stage of labor
     - FHR
     - Baseline fetal heart rate variability (absent, minimal, moderate, or marked)
     - Accelerations
     - Decelerations (early, variable, late, or prolonged)
     - Changes or trends over time
     - Sinusoidal pattern
     - Fetal heart rate category
3. Assess uterine activity continuously to include:
     - Contraction frequency
     - Contraction duration
     - Contraction intensity
     - External monitoring - based on maternal subjective description/palpation
     - Internal monitoring - based on mmHg via an intrauterine pressure catheter (IUPC)
   - Resting tone between contractions
4. Assess maternal vital signs
   - Blood pressure, heart rate, and respiratory rate every hour
   - Temperature
     - every 4 hours if membranes are intact
     - every 2 hours if membranes are ruptured
     - every 1 hour if temperature is greater than 99.6.

AMBULATION:

5. Allow low risk patients to ambulate after appropriate physician assessment, only as ordered.

REPORTABLE CONDITIONS:

6. Report to physician/midwife immediately:
   - FHR deceleration including variable, late, and prolonged decelerations
   - Signs of uterine hypertonicity
     - Resting tone greater than or equal to 15 mmHg
     - Uterine contraction greater than 90 seconds
     - Peak pressure greater than 80 mmHg
   - UterineTachysystole
     - Greater than 5 contractions in a 10 minutes, averaged over 30 minute window.
   - Signs/symptoms of prolapsed cord
   - Change of maternal VS from baseline

COMPLICATION MANAGEMENT:

7. In addition to the above (#6), initiate the following conservative corrective measures if indicated by FHR or uterine activity monitoring:
   - Supplemental oxygen
   - Intravenous fluid as ordered
   - Maternal position changes
   - Discontinue or decrease Pitocin
   - Administer Terbutaline as ordered
   - Amnioinfusion (as ordered)
   - Instruct when to push and when not to push (decrease pushing during episode of decelerations)

PATIENT/FAMILY TEACHING:

8. Instruct on the following:
   - Purpose of EFM
   - Allowable movement/position change

ADDITIONAL PROTOCOLS:

9. Refer to the following as indicated:
   - Intravenous Therapy
   - Pain Management
   - Patient in Labor

DOCUMENTATION:

10. Document in accordance with documentation standards.
11. Document in electronic health record to include fetal monitoring every 1 hour.
12. Document FHR status prior to each increase of oxytocin and every 30 minutes while patient is actively pushing during the second stage of labor.
13. Record the following in electronic health record as relevant events occur:
    - Maternal VS
    - Vaginal exam findings
    - Medications/anesthesia administered (name and dose)
    - Procedures
    - Maternal activities (e.g., voiding, emesis, position changes)
    - Ruptured membrane (amount, color)

14. Document the following on the beginning of EFM strip:
    - Patient's name, MRN, date of birth
    - In addition, document the following at the beginning of the initial strip:
      - Gravida, parity, abortions
      - Estimated gestational age
      - Admission diagnosis
15. Document number of strips on unit log sheet.

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