Intermittent Auscultation

Denver Health
Objectives

- Understand the evidence supporting IA as a valid tool for assessing the FHR and fetal well-being
- Understand benefits and limitations of IA
- Identify the appropriate patient for IA
- Describe the clinical decision making process when using IA
- Identify interventions in the presence of non-reassuring findings
- Identify criteria for discontinuing IA and moving to EFM
- Demonstrate how to perform IA and document correctly
**BACKGROUND**

- Fetal Heart Rate (FHR) monitoring is a crucial part of monitoring the well-being of the fetus during labor.

- Goal of FHR monitoring is to assess fetal well-being and detect any abnormalities which might indicate fetal intolerance of labor in order that interventions to prevent fetal or maternal injury or death may be preformed in a timely manner.
4 ways of monitoring the FHR

**Intermittent Auscultation**... a systemic method of listening to the fetal heart with an acoustical device at predetermined intervals.
- Pinard horn or fetoscope
- Doppler... fetal heart sound from deflected ultrasound waves

**Continuous Fetal Monitoring**... continuous use of a Doppler device with computerized logic to interpret and record the Doppler signals
- External...belts on belly
- Internal...fetal scalp electrode
The Pinard Horn
The Fetoscope
The Doppler
The oldest method is Intermittent Auscultation (IA) since 1800’s

Electronic Fetal Heart Monitoring developed in 1950’s
- 1970’s used nation wide in hospitals
- 1980 nearly 50% of all labors
- 1990’s 60–75% of all labors
- 2000’s 85% or more
“Despite its widespread use, there is controversy about the efficacy of EFM, interobserver and intraobserver variability, nomenclature, systems for interpretation, and management algorithms. Moreover, there is evidence that the use of EFM increases the rate of cesarean deliveries and operative vaginal deliveries.”

ACOG July 2009
COCHRANE REVIEW
Comparing Continuous Electronic Monitoring Of The Baby's Heartbeat In Labour Using Cardiotocography (CTG, Sometimes Known As EFM) With Intermittent Monitoring (Intermittent Auscultation, IA)

REVIEW CONTAINED 12 TRIALS INVOLVING >37,000 WOMEN

MOST TRIALS NOT WELL DONE

ONE WELL-DESIGNED TRIAL WITH >12,000 WOMEN

NO DIFFERENCE IN NUMBER OF BABIES WHO DIED DURING OR SHORTLY AFTER BIRTH

NEONATAL SEIZURES RARE, BUT SLIGHTLY MORE IN IA GROUP
No difference in incidence of CP between IA and EFM

EFM was associated with a significant increase in C-Sections and instrumental vaginal deliveries

Recent review by ACOG (July 2009) comparing EFM and IA
“...the only clinically significant benefit from the routine use of EFM was the reduction in neonatal seizures. The rates of IP and neonatal deaths, short-term morbidity and long term morbidity including CP were similar whether the FHR had been monitored continuously or intermittently.”

- New England Journal of Medicine, March 7, 1996 Vol-334
- Editorial by Dermot MacDonald of the Dublin Trial
THE PROBLEM WITH EFM IS...

- Over use in low-risk women
- Over reliance on a poor screening tool
  - 99% false positive rate for predicting CP
  - Low reliability and validity
- Increased rate of interventions with significant increase in morbidity and mortality for women and babies
- Can contribute to significantly more difficulty in legal cases second to interpretation disputes
CONTINUOUS FETAL MONITORING

Benefits
- Can identify early signs of developing hypoxia
- Allows closer monitoring of high risk patients
- Excellent predictor of a normally oxygenated fetus
- Records FHR and UCs simultaneously

Limitations
- High rate of false positives leading to increased interventions...C/S, etc... without better outcomes
- Prevents maternal mobility
- No agreement regarding timing of intervention
- Expensive
- Poor reliability/validity
INTERMITTENT AUSCULTATION

- Benefits
  - Evidence-based practice
  - Lower rates of C/S, operative delivery and related morbidities/mortalities for mom and baby
  - Increased mobility for mother...can ambulate, hydrotherapy, more comfortable
  - Decrease use of analgesia/anesthesia
  - Fosters more continuous labor support
  - Focus on mother not machine
  - Facilitates alternative birth positions
Limitations

- Frequency of auscultation is lacking evidence but agreed upon
- Could miss an acute and sustained bradycardia (rare)
- Difficult to assess variability
- Periodicity of decelerations cannot be determined
- Attention to staffing matrix
- Requires unit education, commitment and support for sustained use
- No permanent record of FHR (could be good or bad)
Supportive Care During Labor

Continuous Labor Support
- 50% reduction in the cesarean rate
- 25% shorter labor
- 60% reduction in epidural requests
- 40% reduction in oxytocin use
- 30% reduction in analgesia use
- 40% reduction in forceps delivery
SOCG and ACOG

- “IA is the preferred method of fetal surveillance for healthy low risk women in labor”
  
  SOGC (Society of Obstetricians and Gynecologists of Canada)

- “The FHR may be evaluated by auscultation or by EFM”
  
  ACOG
“Given that the available data do not show a clear benefit for the use of EFM over intermittent auscultation, either option is acceptable in a patient without complications. “

ACOG July 2009
Ethical Principles

- Autonomy...personal liberty and self determination
- Beneficence...to do good
- Nonmaleficence...to prevent harm
- Justice...fair or equal treatment of individuals
- Veracity...duty to tell the truth
WHAT TO DO?

- Use fetal monitoring appropriately.

- Intermittent auscultation should be the standard for low-risk women with reassuring fetal status upon admission in labor.

- Agreed upon criteria for “low-risk” and the intrapartum risk factors which would require moving from IA to CEFM.

- Agreed upon and consistent use of auscultation frequency.

- Work towards standardization of EFM pattern identification and appropriate responses.
IA...Who is the appropriate candidate?

- Low-Risk Patient
  - Reassuring FHR strip on admission (recent from OBSR is fine)
  - Gestation 36 weeks or greater
  - Vertex presentations
  - Singleton pregnancies
  - No maternal/fetal exclusionary factors (per clinical care standard CCS)
  - No IP risk factors (per CCS)
REASSURING DEFINED

- Normal baseline rate and rhythm
- Moderate variability (6–25 bpm)
- Absence of persistent (occurring more than 50% of the time) variable decelerations or late decelerations
- 20 minute strip
- NOTE: No accelerations required
Special Cases

- Misoprostol
- Meconium
- Parenteral Narcotics
- Oligohydramnios
When... Frequency of IA

- ACOG and AWHONN agree on frequency
  - Latent labor: q 1 hour
  - Active labor: q 30 minutes
  - Second stage: q 15 minutes

- Listen Before:
  - Administration of narcotics
  - AROM
  - Transfer or discharge of patient

- Listen after:
  - Vaginal exam
  - SROM/AROM
  - Recognition of abnormal uterine activity
  - Recognition of abnormal vaginal bleeding
Where...

- Walking
- Standing
- In the tub
- On the ball
- On the stool
- With a mouse, on a house, in a chair...
- Anywhere!
Established guidelines for unit
Educate staff
Have watch or clock with seconds available
Obtain reassuring 20 minute strip prior to initiating
Palpate fetal back using Leopold’s
Place Doppler on maternal abdomen and auscultate between UCs X 60 seconds and then for 60 seconds after a UC
Palpate UCs for strength, note frequency, and length, beginning and end. Ask women to tell you!
Count baseline rate, listen for accelerations or decelerations
Count in 5 sec increments, or continuous for 60 seconds or 30 seconds x2
Obtain maternal pulse
Note fetal movement
Document well
In case of non-reassuring FHT...

- Same as with EFM
  - Increase frequency of auscultation
  - Change to EFM until reassured
  - Position Change
  - Fluid Bolus
  - Oxygen
  - Notify provider
Continuous monitoring if: IP risk factors
- Frank bleeding not bloody show
- Thick meconium
- Maternal fever
- Baseline bradycardia or tachycardia
- Abnormal rhythm
- Persistent decelerations after position changes
- Uterine tachysystole noted
- Acuity of unit
- Severe persistent hypertension or hypotension
- Desires CLE
- Augmentation with Pitocin
Documentation of fetal heart rate auscultation in OB Trace View may be placed under “Fetus” utilizing the drop down boxes noting baseline, presence or absence of decelerations and presence or absence of accelerations, maternal pulse rate, and fetal movement.

In addition, a narrative documentation may be placed under “Events” using remarks.
0800
FHR 130-136 bpm via auscultation, regular rhythm. Acceleration to 160 bpm. No audible decelerations. Auscultated x 120 seconds after UC. Pt ambulating and coping well with UCs. Palpable FM. Maternal pulse 90.

0830
Pt reports UCs getting stronger. Breathing with UCs and coping well. Palpable FM. Maternal pulse 100. FHR auscultated 135 bpm x 60sec before UC. Regular rhythm. Acceleration to 155 bpm. Abrupt decrease to 90 bpm following UC. Quick return to baseline. Auscultated x 60 sec after UC. Pt repositioned to left lateral. Increased frequency of auscultation.
0833 baseline FHR auscultated 135bpm. No deceleration auscultated x60 secs before and after UC. No audible accels. Maternal pulse 90. Pt reports FM.

0837 baseline FHR 130bpm. No audible accels. No decels auscultated 60 secs before or after UC. Maternal pulse 100. Palpable FM. Will return to q30min auscultation frequency.
0900  Pt resting in left lateral. Breathing with UCs. SROM clear fluid. FHR baseline 135bpm. Acceleration to 170bpm. Abrupt decrease to 70 bpm auscultated immediately after UC x 30 seconds with return to baseline. Auscultated x 60 sec before and after UC. Pt placed in hands and knees position w/an increase in auscultation frequency. Maternal pulse 90.

0903  Deceleration to 60bpm at nadir x 60 seconds auscultated during and after UC X 120 seconds. Return to baseline. Maternal pulse 90. IVLR fluids started. Pt to right lateral.

0908  Deceleration to 70 bpm at nadir auscultated during and after UC x 120 seconds. Return to baseline. Maternal pulse 100. Continuous EFM placed. Provider notified.
Legal Considerations

- Document Well
- Follow Our CCS at DH
- Communicate Well
- Numerous Cases Have Upheld IA as an Acceptable Standard
- Can Have Legal Benefits
- Use Good Clinical Decision-Making
Questions...Discussion
Thank You!
References


References


