FIRST STAGE OF LABOR; MANAGEMENT AND DYSTOCIA

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When to admit?

- Women in active labor should be admitted:
  - Regular contractions
  - Significant effacement (≥80%)
  - Dilatation 4-5 cm
You can discharge if:

- intact membrane
- No cervical change or contractions at the end of 2h observation
- Normal FHR tracing

except..

- Complicated pregnancies
- Previous cesarean delivery
Management of first stage of labor

- Initial examination:
  - mother V/S
  - contractions
  - FHR assessment
  - cervical & pelvic examination
Laboratory tests

- Hb/Hct
- Blood type/ Ab screen
- HIV-Hepatitis B-syphilis
Patient preparation

× NO routine enema
× NO perineal shaving
× NO bladder catheter
× NO routine Antibiotics

☐ GBS chemoprophylaxis $\rightarrow$ GBS culture +

OR

GA $< 37w$

ROM $\geq 18h$

history of neonatal sepsis with GBS
Diet:

- Clear liquids
- No solid foods
- If need to intravenous hydration:
  - DW5% + half saline
  - N/S
  - Ringer lactate
  → 250 cc/h.
Patient position:

- Mother comfort & preferences
NO routine amniotomy!!

• Contra indications:

1- HIV +
2- Hepatitis B, C +
Monitoring:

- In Low risks, FHR → q30 min – q 15 min
- In high risks, FHR → q15min – q5 min
- Contractions → in 30 min, divided by 3. (per 10 min)
  - Tachysystole: >5 contraction in 10 min
- BP q 4h
- T q 1h if membrane ruptured.
Monitoring:

- Labor progress:
  1. on admission
  2. At 4 h interval in the first stage
  3. Prior to administration analgesia/anesthesia
  4. Mother feels the urge to push
  5. At 1-2 h interval at second stage
  6. In FHR abnormalities occur
Normal labor progression

Friedman labor curve

First stage = A + B + C + D, where A = latent phase, B = acceleration phase, C = phase of maximum slope, and D = deceleration phase.
Second stage = E.
Friedman criteria (1950s)

- Transition latent to active phase $\rightarrow$ 3-4 cm

- Normal progression in active phase:
  - nulliparous: 1.2 cm/h
  - Multiparous: 1.5 cm/h
Contemporary criteria (21st century)

Contemporary labor curves by parity

Average labor curves by parity in singleton term pregnancies with spontaneous onset of labor, vaginal delivery, and normal neonatal outcomes. Note that for parous women, the inflection point for acceleration of cervical dilation is at approximately 6 cm and that there is no clear inflection point for nulliparous women.
Contemporary criteria (21st century)

- Much slower than Friedman’s
- Active phase starts at $\rightarrow$ 5-6cm (not very clear)
- Deceleration phase $\rightarrow$ omitted!
- At $6cm \leq$ cervical dilation $\rightarrow$ 1-2cm/h progression suspected.
- First stage duration is longer than Friedman’s.
Partogram

Contemporary estimates of labor duration by dilation at admission

The 95\textsuperscript{th} percentiles of cumulative duration of labor from admission among singleton term nulliparous women with spontaneous onset of labor, vaginal delivery, and normal neonatal outcomes. Colors represent cervical dilation when women were admitted to the labor unit: green (5 cm), yellow (4 cm), blue (3 cm), red (2 cm).
Partogram

- Right deviation from this curves suggest a protraction or arrest disorders

- Routine use of partograph has not been proven to significantly improve obstetric outcome.
Protraction and arrest disorders:

- Risk factors: - uterine factors
  - fetal factors
  - bony pelvis

  o Hypo contractile uterine activity: the most common risk factor in the first stage disorders.
Hypo contractile uterine activity:

- **Diagnosis:**
  - Contractions not strong on palpation;
  - Infrequent (<3 or 4 contractions/10 min);
  - Short duration (<50 sec).
In addition..

- **Maternal obesity** $\Rightarrow$ increasing length of the first stage of labor (not 2$^{nd}$ stage!)

- **Cephalopelvic disproportion** due to:
  - ✓ Fetal malposition
  - ✓ Fetal malpresentation
  - ✓ Disparity between fetal size & maternal pelvic dimension
    - ➢ Large surface anomaly (teratoma - conjoined twin)
    - ➢ Pelvic bone deformity (trauma)
    - ➢ Fetus extremely large
FIRST STAGE PROTRACTION AND ARREST
o Long latent phase:

- Extend many hours or days (in 5%)
- Latent phase duration in 95% of women $\rightarrow <24.5 - 30 \text{ h.}$
Management of long latent phase

- Discussion about normality of the slow progress & supporting
- Massage & water immersion
- Hydration

- Invasive interventions
  1. Therapeutic rest **
  2. Oxytocin with or without amniotomy and/or epidural anesthesia

- NO intervention..
Therapeutic rest

- Allow for progression of labor while mother rests or sleeps. (placed her in observation area)

- DRUGs:
  1. Opioids: morphine (5-10mg IM or IV) → 6-10h sleep
  2. Sedatives: zolpidem (5mg orally) or secobarbital (100mg orally) after ensuring fetomaternal well being. (could be used at home)
Oxytocin administration

- Aid progression of labor from latent to active phase.
- Oxytocin administration and therapeutic rest, equal efficacy and safety in prolonged latent phase.

- Amniotomy alone is not useful.
**Active phase protraction**

- TV ≥ 6cm + progression less than 1cm/h.

If it last for more than 2 hours, need interventions:

- **Oxytocin** (even in the absence of documented hypocontractile uterine)
- **Amniotomy** (in the adequate decent -2 or lower)
- **Expectant management**
Ineffective approaches:

- misoprostol
- Ambulation
- Amniotomy alone
Active phase arrest:

- TV ≥ 6cm +
  1. No cervical change for ≥ 4h despite adequate contractions; or
  2. No cervical change for ≥ 6h with inadequate contractions

Management ➔ cesarean delivery

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\begin{align*}
\text{Arrest diagnosed too soon} & \rightarrow \text{unnecessary C/S} \\
\text{Arrest diagnosed too late} & \rightarrow \text{uterine rupture}
\end{align*}
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Thanks for your attention