Supporting Intended Vaginal Birth

All-team webinar February 22, 2011

Good morning…

Please do not put this call on hold! Use the chat window at left to sign in: name of hospital, your name and any team members participating with you.

AGENDA

Welcome/Introductions	Kate Berrien	7:30
Cervical Ripening	Nancy Chescheir	7:35
Team discussion of current hospital practices around cervical ripening	UNC, Forsyth, Central Carolina and all participants	7:50
Review and discussion of teams' goals and objectives; status report from each team	Nancy and Kate	8:10
Patient-Centered Care: Patient Education	Kate	8:40
Labor Support	Kate	8:50
Next steps	Nancy	8:55

Once there was a silly old ram,

Thought he'd punch a hole in a dam

No one could make that ram, scram.

He kept buttin that dam….

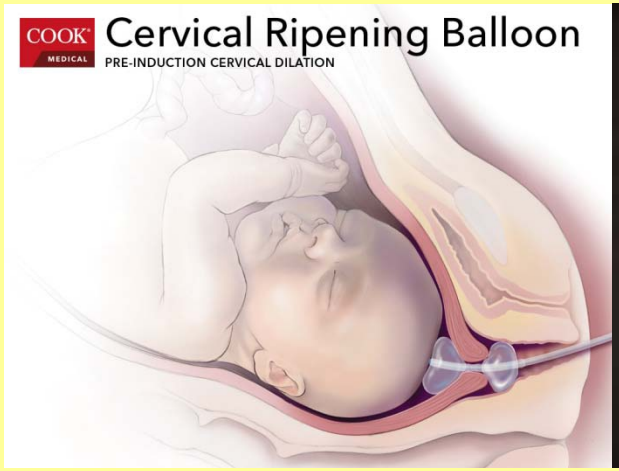
As sung by Frank Sinatra, and written by Sammy Cahn, Jimmy Van Heusen

Cervical Ripening

- Ideal agent not identified
  - Safe
    - Low rates of neonatal complications (NRFS, HIE)
    - Low rates of maternal complications
      - Tachysytole, hyperstimulation, post partum hemorrhage, infection, uterine rupture
      - Useful in both elective and indicated inductions
      - Useful with TOLAC and not
  - Effective
    - High vaginal birth rate
  - Cost Effective
    - Low initial cost
    - Reduced time in L&D
    - Reduced nursing time
  - High patient satisfaction
    - Rapid induction

MECHANICAL DILATORS

Can be used alone or with prostaglandins



PROSTAGLANDINS

Cytotec (Misoprostol): Prostaglandin E1
Cervidil , Prostin, Prepidil (Dinoprostone): Prostaglandin E2

OTHER

Evening Primrose Oil,
Nipple Stimulation,
Cervical Sweeping

ACOG Practice Bulletin #107
August 2009: Induction of Labor

- The goal of cervical ripening is to facilitate the process of cervical softening, thinning, and dilating with resultant reduction in the rate of failed induction and induction to delivery time.
- An unfavorable cervix generally has been defined as a Bishop score of 6 or less in most randomized trials. If the total score is more than 8, the probability of vaginal delivery after labor induction is similar to that after spontaneous labor.

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MECHANICAL DILATORS

- Decreased CS rate v oxytocin alone
- Insufficient evidence to assess vaginal delivery within 24 hours v prostaglandin
- Advantages of the Foley
  - Low cost
  - Stability at room temperature
  - Reduced uterine tachysystole and hyperstimuation

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Misoprostol

- Synthetic PGE1 Analogue
- Route of administration: Intravaginal, oral, sublingual, rectal (pp hemorrhage)
- Used for cervical ripening AND induction
- 100 microgram unscored or 200 microgram tablets
  - Dosing 25 or 50 microgram
- Extensive data showing safety and efficacy
- FDA approved for prevention of peptic ulcers
  - 2002 New label on use for ripening and induction
- The majority of adverse maternal and fetal outcomes associated with misoprostol therapy resulted from the use of doses greater than 25 mcg vaginally.

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PROSTAGLANDIN E2

- Two preparations available
  - 2.5 ml syringe with gel containing 0.5 mg dinoprostone (Prepidil)
  - Vaginal insert containing 10 mg dinoprostone
    - Releases PGE2 at slower rate than gel (0.3 mg/hour)
- Increased likelihood of delivery within 24 hours compared to placebo or oxytocin alone
- No reduction in rate of cesarean sections
- Increased risk of uterine tachysystole/ hyperstimulation (4x rate w/ placebo)
- Cost is substantial

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Comparison of Techniques for Ripening

	FOLEY	PGE2 (Cervidil, Prepidil)	PGE1 (Misoprostol)
Failed Induction	30%*	12%*	
Vaginal Delivery Rate	64%*, 78**	63%*, 78%***, 75%#	81%**,83%***, 75.1%#
Non Reassuring FHR	24%*	31%*	
Hyperstimulation, tachysystole	0*	15%*, 9.2%#	11.2%
Cost	Low	High	Low
Neonatal Complications	Low	8.8%#	9.5%#

*Pennel 2009, Jozwiak 2011**, Tan ***, Campbell-Austin#

Randomized study comparing Foley Catheter with Intravaginal Misoprostol as cervical ripening SMFM #84 Dionne, et al

- Foley with oxytocin v Foley with cytotec v cytotec alone
- RCT stratified by parity; Bishop Score ≤ 5; primary outcome delivery within 24 hours of induction onset; secondary outcomes CS rates, complications
- Cytotec increases vaginal birth rates; Foley associated with shorter delay and faster onset of labor

	Delay before onset labor	Avg duration of labor	Birth within 24 hours	Vaginal births
Foley +Pit	3.7 hrs*	12.8 hr	93.5%	56.5%
Foley +Cytotec	5.1 hrs	12.1 hr	87.1%	76.4%*
Cytotec alone	9.2 hrs	11.0 hr	73.8%*	71.6%*

CERVICAL RIPENING BUCKETS

DEFINE WHO GETS CERVICAL RIPENING

Bishop <6? Cervix ≤ 3cm dilated?

WHICH AGENT TO USE IN NULLIPAROUS PATIENT?

MECHANICAL AGENT: WHICH PROSTAGLANDIN?

Preferred if must ripen prior uterine surgery patient.

On tension or not? (Probably no difference in outcome)

How long to leave in? 12 hours or spontaneously out?

OK with GBS positivity

PROSTAGLANDIN AGENT

Oral misoprostol most effective, safest, cheapest

Are there other issues?

Are there contraindications in nulliparous patients?

- Prior uterine surgery
- 2004 article suggests no contraindication w/oligo

Misoprostol

Route

Vaginal increased bioavailability, more prone to hyperstimulation than with oral dosing

Increased patient satisfaction with Oral dose

Increased ease of administration

Works better with SROM than vaginal

50 micrograms po followed by 100 micrograms PO every 4 hours up to total of 4 doses

Cervidil, Prepidil

More expensive, more tachysystole, lower vaginal birth rate

Common observation that one could remove the Cervidil pessary has not been shown to make a difference in outcome

PDSA CYCLE SAMPLES

- Plan
  - Use either Foley Catheter +/- Misoprostol (oral dosing) for cervical ripening; establish protocols for same
- Do
  - Use in all women having induction of labor with cervix < 3cm or Bishop < 6 for 2 months.
- Study
  - Compare successful inductions before and after change
  - Compare hospital charges before and after change
  - Compare neonatal outcomes before and after
  - Ask providers, nursing staff, patients and pediatricians for feed back
- Act
  - If satisfied with result, move to next project after confirming sustainability
  - If not satisfied, address issue after planning next intervention on this topic

Team goals and objectives

- Are your objectives “SMART” enough?
  - Specific
  - Measurable
  - Attainable
  - Realistic
  - Time-bound
- Examples:

  “Increase use of cervical ripening for patients with unfavorable cervix to 100% (Bishop Score <7) by May 2011.”

  “By May 1, 2011, we will decrease the number of NTSV patients admitted for induction of labor with unfavorable cervix (Bishop Score less than 7 or cervical dilation less than 3m dilation) by 20 %.”

  “Increase IUPC rate in patients with failure to progress from 63% to 90% (for patients >4cm) by May 2011.”

Excellent ideas – smarter objectives?

- Reduce c-section rate for NTSV
- Educate providers and patients
- Patient education
- Decrease induction of the unripe cervix
- Create guidelines for induction using Bishop Score
- Develop an induction policy
- Peer review of all physicians with failure to progress c-sections
- Protocol for prodromal labor
- Improve IUPC utilization
- Implement new induction policy

Status report from the S4B teams

- What have you worked on so far?
- What has been successful?
- What has not worked?
- What are your team's next steps?
  - What change will you test – something you will try to do differently to see if it makes a difference?
  - How will you know if it worked?

Examples:

- Provider education results in increased use of IUPC
- Patient education results in fewer requests for elective induction
- Induction guidelines result in more patients with unfavorable cervix receiving cervical ripening

Patient-centered care: patient education

- Including patients in your quality improvement efforts?
- Patient education is one area where patients can contribute
  - What messages do patients want/need?
  - What strategies are most effective?
- How will you know if patient education is having an impact?
  - What is the desired impact?
- What are SIVB hospital teams doing to address patient education?

Labor Support – role in the c-section rate?

- Preliminary data suggest that patients with no documented labor support method have a lower rate of vaginal birth (61.22% vs. 75.23%)
- Can we improve documentation of labor support methods?

Labor support method	Number of patients	Rate of use
Acupuncture	1	0.05%
TENS unit	1	0.05%
Hypnosis	1	0.05%
Homeopathics/herbals	2	0.10%
Sterile water injection	3	0.15%
Doula	18	0.93%
Immersion tub	43	2.22%
Shower	44	2.27%
None documented	49	2.52%
Massage	60	3.10%
Therapeutic rest	61	3.15%
Other	319	16.46%
One-to-one nursing	521	26.88%
Pain medication	529	27.30%
Supportive family/friend	764	39.42%
Positioning	1002	51.70%
Epidural	1582	81.63%

Data notes

- Please do not enter any cases which are not NTSV into the database
- Sample size = 40 NTSV patients admitted for intended vaginal delivery plus as many c-section patients as there are along the way
  - Consider larger sample to increase accuracy
- Enter February data!!
- Ask questions early and often

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Next steps

- Focus for next month
  - Induction of labor policies and procedures?
  - Management of prodromal labor/rule-out labor protocols?
- Next month's webinar:
  - Tuesday March 22, 7:30-9:00am