9/9/23 njm

Cervical Ripening Guidelines: Inpatient

Contents

Vaginal misoprostol

Patients with an unfavorable cervix may be given misoprostol 25-50 mcg vaginally q4h. Patients should remain recumbent on the monitor for 1 hour after placement of the tablet. Because of their absorption kinetics, it is not indicated to overlap vaginal and oral misoprostol. Oxytocin may be begun 4 hours after the last dose of misoprostol at the discretion of the provider. In the presence of fetal intolerance of labor (see **Appendix B** NICHD 3 electronic fetal monitoring guidelines), the misoprostol fragments may be removed if possible. In addition to a fluid bolus and maternal lateralization, terbutaline 0.25 mg IV or SC may be administered.

Oral misoprostol

Please see - Cervical Ripening: Oral Titrated Liquid Misoprostol

Dinoprostone in sustained release

Dinoprostone in sustained-release tape can be used a second-line agent to the above. After initial placement, the patient should be continuously monitored for 2 hrs initially. After the initial phase then monitor on an as needed basis based on clinical response, e. g., re-institute monitoring if regular contractions or tachysystole on palpation.

Foley Bulb

1. Women with 1-2 prior cesarean delivery who are candidates for induction of labor for obstetric reasons are consented for cervical ripening by placement of a transcervical Foley catheter.
2. The patient should empty her urinary bladder in order to facilitate the procedure. Cervical digital examination is carried out and a Bishop score assigned.
3. Equipment recommended for placement of the device includes Foley catheter with 30 mL bulb, Bozeman clamp or ring forceps.
4. After testing for integrity of the Foley bulb, the Bozeman or ring clamp is used to insert the catheter high into the endocervical canal. Ideal placement of the bulb of the catheter is at or above the level of the internal cervical os, where it is then inflated with 30 mL of sterile saline. After proper placement, the proximal end of the catheter tubing is taped to the inner aspect of the mother’s thigh, allowing sufficient slack for her to extend her leg comfortably.
5. The mother is then monitored at bed rest for an hour after catheter placement. Bedrest is encouraged after placement so that the device is not inadvertently

expelled, but the patient may be up to the bathroom as needed, exercising appropriate caution not to pull on the catheter.
6. Approximately 12 hours after placement of the device, it can be removed by deflating the bulb. A repeat cervical exam is then performed, and the Bishop score reassigned. Oxytocin may be begun, and rupture of membranes may be carried out at the discretion of the provider.

Double balloon device

1. Advance the Cervical Ripening Balloon through the cervix until both balloons have entered the cervical canal.
2. Inflate the uterine balloon with 40 mL of saline. Once the uterine balloon is inflated, the device is pulled back until the balloon abuts the internal cervical os.
3. The vaginal balloon is visible outside the external cervical os and is inflated with 20 mL of saline.
4. Once the balloons are situated on either side of the cervix, saline is added to a maximum of 80 mL per balloon.

Low dose Pitocin

Please see the Inpatient oxytocin orderset.
-This process refers to an oxytocin infusion given in a progressive manner starting at 1-2 milliunits/minute and increasing every 30 minutes to a limit of 10-16 milliunits/minute with no progression beyond those points in the cervical ripening phase.
-After cervical ripening has been completed, then full oxytocin augmentation dosing applies according to the clinical scenario.

Combined approach(s)
Some, but not all, trials have shown that the concurrent use of mechanical and pharmacologic ripening methods may have modest benefits over the use of a single method alone, without increasing the risk of adverse obstetric or perinatal outcomes:

-balloon catheter plus a prostaglandin
Or
-balloon catheter plus oxytocin

Data are insufficient to determine whether to routinely use combination therapy, which combination to use, and the optimum protocol.

Failed induction

See Appendix A: Induction of Labor Algorithm, adapted from CMQCC

Reference:
Induction of Labor. ACOG Practice Bulletin No. 107. American College of Obstetricians and Gynecologists. Obstet Gynecol 2009;114: 386–97. (Reaffirmed 2020)

Macones GA et al. The 2008 National Institute of Child Health and Human Development Workshop Report on Electronic Fetal Monitoring Update on Definitions, Interpretation, and Research Guidelines. Obstet Gynecol 2008;112(3):661–6

Orr L, Reisinger-Kindle K, Roy A, Levine L, Connolly K, Visintainer P, Schoen CN. Combination of Foley and prostaglandins versus Foley and oxytocin for cervical ripening: a network meta-analysis. Am J Obstet Gynecol. 2020;223(5):743.e1.

California Maternal Quality Care Collaborative
https://www.cmqcc.org/ (Accessed 10/18/22)

Washington State Hospital Association Medical Data Center
(WSHA-Maternal Data Center)
https://www.cmqcc.org/maternal-data-center/washington-state-hospital-association-mdc (Accessed 10/18/22)

Revised 10/18/22 njm
Revised 10/31/20 njm
Revised 7/13/18 njm
Revised 7/24/16 njm
Revised 02/5/16 njm
Reviewed 02/13 njm
Reviewed 01/11 njm
Reviewed 12/06 njm
Revised 09/94 njm
Reviewed 08/94 njm
Approved 06/90

Appendix 1
Modified Bishop Score (ACOG, after Bishop EH, 1964)

Score	Dilation (cm)	Effacement (%)	Station	Cx Consistency	Cx Position
0	closed	0-25	-3	firm	posterior

1	1-2	25-50	-2	medium	mid
2	3-4	50-75	0/-1	soft	anterior
3	>4	>75%	+1/+2	-	-

Total = _____

Unfavorable: < 6 for multips, < 8 for primips
Favorable: ≥ 6 for multips, ≥ 8 for primips

Appendix B
NICHD 3-Tier Fetal Heart Rate Interpretation System*

Category I (Normal)

-baseline rate: 110-160 bpm
-baseline FHR variability: moderate (6 to 25 bpm)
-late or variable decelerations: absent
-early decelerations: present or absent
-accelerations: present or absent

Category II (Indeterminate)

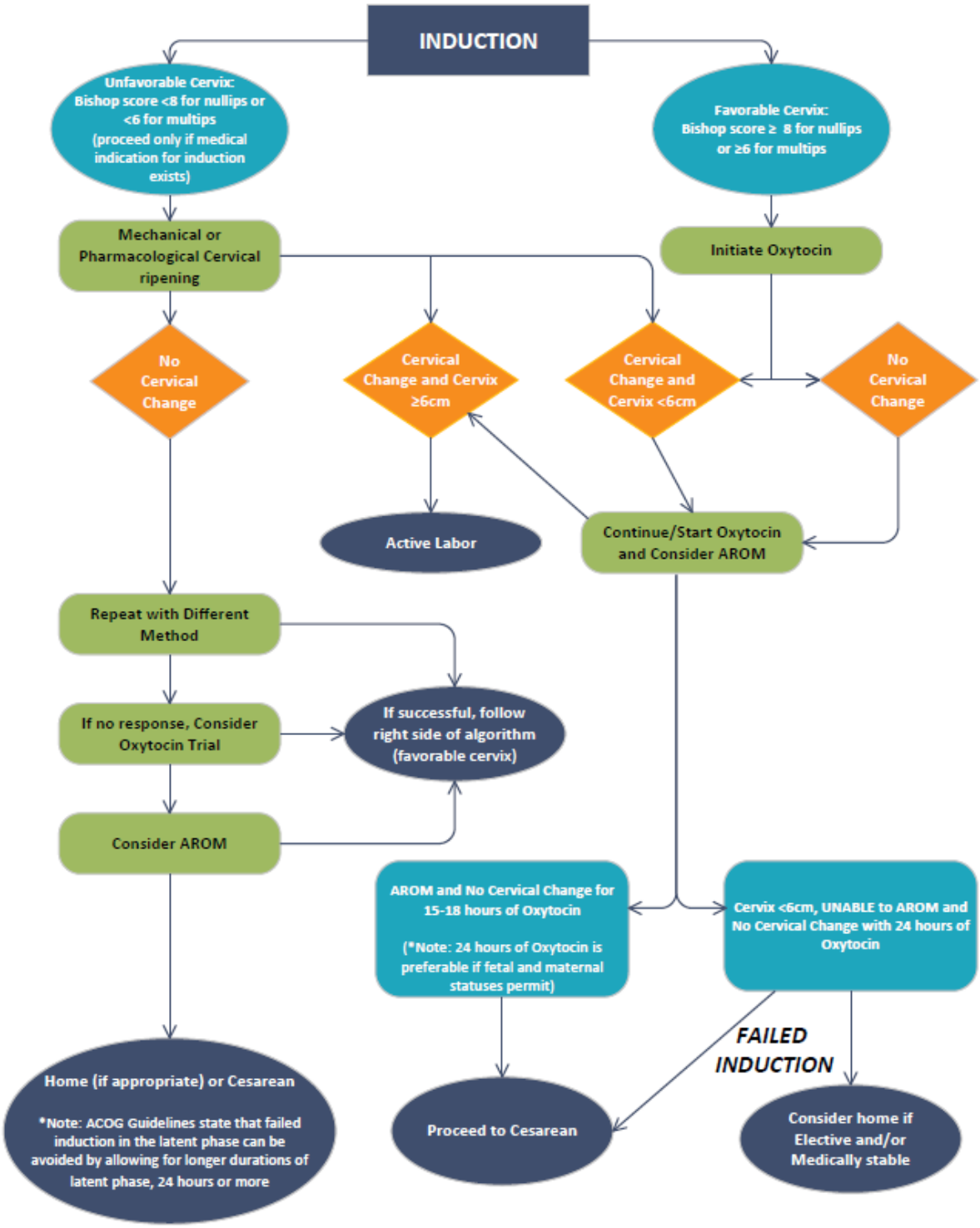
-baseline rate:
    -bradycardia (< 110 bpm) not accompanied by absent baseline variability
    -tachycardia (> 160 bpm)
-baseline FHR variability:
    -minimal baseline variability (0 to 5 bpm)
    -absent baseline variability not accompanied by recurrent decelerations
    -marked baseline variability (> 25 bpm)
-accelerations:
    -absence of induced accelerations after fetal stimulation
-periodic or episodic decelerations
    -recurrent variables accompanied by minimal or moderate baseline variability
    -prolonged decelerations >2 minutes but <10 minutes
    -recurrent late decelerations with moderate baseline variability (6 to 25 bpm)
    -variables with other characteristics (slow return to baseline, “overshoots”)

Category III (Abnormal)

-absent baseline FHR variability and any of the following:
    -recurrent late decelerations
    -recurrent variable decelerations
    -bradycardia (< 110 bpm)
    -sinusoidal pattern

*Macones GA et al. The 2008 National Institute of Child Health and Human Development Workshop Report on Electronic Fetal Monitoring Update on Definitions, Interpretation, and Research Guidelines. Obstet Gynecol 2008;112(3):661–6

Appendix A
Induction of Labor Algorithm



SCF 2020 Adapted from CMQCC