EXTERNAL CEPHALIC VERSION (ECV)

BACKGROUND

External cephalic version (ECV) refers to a procedure in which the fetus is rotated from a non-cephalic presentation by manipulation through the mother's abdomen.

Performing an ECV has been shown to decrease the rate of non-cephalic presentations in labour and the number of caesarean sections for breech at term.[1]

3-4% of singleton term pregnancies are associated with breech presentation. Spontaneous version rates for nulliparous women are approximately 8% after 36 weeks gestation, and 5% after an unsuccessful ECV.[2]

The success rates for ECV are approximately 40% in nulliparous women and 64% in multiparous.[8] After successful ECV, 97% of fetuses remained cephalic at birth, of whom 87% delivered vaginally. Spontaneous version to a cephalic presentation occurred after 4.3% of failed attempts, and 2.2% of successfully verted cases reverted to breech.[8]

SAFETY AND COMPLICATIONS

ECV has a low complication rate. Approximately 1:200 attempts will require an emergency caesarean section for a serious adverse outcome such as placental abruption, cord prolapse or acute fetal compromise.

Potential complications of ECV include: non-reassuring cardiotocography (CTG) and fetal bradycardia (usually transient), and rarely, placental abruption, uterine rupture and feto-maternal haemorrhage.

Risks associated with ECV: [1, 2,4]

- Transient fetal distress 5.7%
- Abnormal CTG 0.37%
- Vaginal bleeding 0.47%
- Abruption 0.18%
- Emergency caesarean section 0.35%
- Fetal death 0.019% (1 per 5000 attempts at ECV)

The standard pre-operative preparations for caesarean section are not necessary for women undergoing ECV given the low complication rate.

TIMING OF ECV

A large multi-centre randomised study found that ECV initiated at 34-35 weeks gestation compared with 37 weeks or more increases the probability of cephalic presentation at birth, however it does not reduce the rate of caesarean section, and it may increase the risk for preterm birth.[5]

It is reasonable to offer ECV between 35 and 36 weeks for a primiparous woman and between 36 and 37 weeks for a multiparous woman. The timing should be individualized taking into consideration such things as parity, engagement of breech and BMI, etc.

USE OF TOCOLYSIS

The use of tocolysis increases the success rate of ECV.[3] The use of tocolysis also increases the success of repeat ECV in women who had undergone a previous unsuccessful ECV.

Beta-adrenergic agonists are generally preferred for facilitation of ECV; one simple regimen is terbutaline 0.25mg subcutaneously 15 to 30 minutes prior to the procedure. Appendix 1

There are limited data regarding other tocolytics and no evidence that any of these drugs are more effective than beta-adrenergic agonists. Although Nifedipine has also been used in this setting, a 2011 systemic review including two trials comparing nifedipine with terbutaline before ECV and one trial comparing nifedipine with placebo before ECV concluded that use of nifedipine did not increase the rate of successful version or lower the rate of caesarean section delivery.[9]

CONTRA-INDICATIONS TO ECV

ABSOLUTE CONTRAINDICATIONS

- Where caesarean delivery is required (eg. placental praevia, previous classical caesarean section)
- Placental abruption
- Abnormal CTG
- Major uterine anomaly, eg. septate uterus
- Significant fetal anomaly, eg. Hydrocephalus
- Severe oligohydramnios
- Ruptured membranes
- Multiple pregnancy (except for birth of second twin)

RELATIVE CONTRAINDICATIONS (WHERE ECV MIGHT BE MORE COMPLICATED)

- Small-for-gestational-age fetus with normal Doppler parameters[2]
- Pre-eclampsia
- Oligohydramnios
- Major fetal anomalies
- Previous caesarean section or uterine surgery
- Antepartum haemorrhage within the last 7 days (individualised management)

POLICY

ON ADMISSION

Abdominal palpation

- Counselling – ensure informed verbal consent obtained
- Ensure no contra-indications to the procedure
- Review blood group

MATERNAL/FETAL OBSERVATIONS

- Record maternal pulse, blood pressure, temperature and respiratory rate
- Perform CTG, ensuring criteria for normal CTG are met. Document using CTG sticker (please refer to: Fetal Heart Monitoring Guideline GLM0010)

SENIOR MEDICAL REVIEW

- Perform USS to confirm: presentation, AFI and placental location
- Consider tocolysis

FOLLOWING THE PROCEDURE

- Confirm fetal lie and presentation with USS
- Anti-D 625 units for all Rhesus negative women
- Perform CTG. Document using CTG sticker (please refer to: Fetal Heart Monitoring Guideline GLM0010). Discharge home when CTG is normal
- Core midwife to inform woman and LMC of outcome and ongoing management plan

IF ECV IS UNSUCCESSFUL

1. Offer repeat attempt a week later
2. Discuss mode of birth: planned vaginal versus elective caesarean section
   (please refer to CWH Breech Birth guideline: Breech Birth Guideline GLM0048)

REFERENCES

1. Grootscholten K, Kok M, Oei G, et al. External Cephalic Version-Related Risks A Meta-analysis. Obstetrics and Gynecology. 2008; 112(5):1143-51.
2. Royal College of Obstetricians and Gynaecologists. External cephalic version and reducing the incidence of breech presentation. Green-top Guideline No 20a. 2006. Reviewed 2010.
3. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Management of term breech presentation. College Statement C-Obs 11. 2009.
4. Mohamed Ismail NA, Ibrahim M, Mohd Naim N, Mahdy ZA, Jamil Ma, Mohd Razi ZR. Nifedipine versus terbutaline for tocolysis in external cephalic version. Int J Gynaecol Obstet 2008 Sep; 102(3): 263-6
5. Hofmeyr GJ. Interventions to help external cephalic version for breech presentation at term. Cochrane Database Systematic Review. 2004;(1):CD000184.
6. Collaris RJ, Oei SG. External cephalic version: a safe procedure? A systematic review of version-related risks. Acta Obstet Gynecol Scand 2004 Jun; 83(6): 511-8.
7. Tsataris V, Papatsonis D, Goffinet F, Dekker G, Carbonne B. Tocolysis with nifedipine or beta-adrenergic agonists: a meta-analysis. Obstet Gynecol 2001 May; 97(5 Pt 2): 840-7
8. Melo P, Georgiou EX, Hedditch A. et al. External cephalic version at term:a cohort study of 18 years' experience. BJOG 2019: 126:493
9. Wilcox CB, Nassar N, Roberst CL. Effectiveness of nifedipine tocolysis to facilitate external cephalic version: a systematic review. BJOG 2011; 118:423

APPENDIX 1 TOCOLYSIS FOR EXTERNAL CEPHALIC VERSION

The following regimes can be administered 20-30 minutes prior to ECV.

Maternal pulse and blood pressure need to be monitored with all 3 regimes.

CONTRA-INDICATIONS TO TOCOLYSIS

- Severe cardiac disease (especially cardiac tachyarrthymias)
- Significant haemorrhage
- Hypotension (due to vasodilator effect and tachycardia)

Note: 50% of women develop palpitations with IV use (recommend subcutaneous regime as first line).

FIRST LINE THERAPY

Terbutaline 250 micrograms subcutaneous (0.5 mL of 500 microgram/mL vial)

ALTERNATIVE OPTIONS

Terbutaline 250 microgram IV over 5 minutes (0.5 mL of 500 microgram vial diluted in 5 mL 0.9% sodium chloride)