SUCCESS OF EXTERNAL CEPHALIC VERSION (ECV) WITH TERBUTALINE AS TOCOLYTIC

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OBJECTIVE:

To find out the effectiveness of Terbutaline in external cephalic version.

METHODOLGY:

This prospective Observational study was conducted in Peshawar Health Center(PHC) from 15th August 2015 to 9th November 2016. Patients having uncomplicated breech presentation from 36-42 weeks were included in the study. All patients were given Injection Terbutaline subcutaneously(/c) 5 minutes before the procedure.ECV was performed by a single skilled consultant obstetrician. After the procedure the mother and the fetus were observed for any complications. Success was defined in terms of conversion of the fetus from breech to cephalic presentation. All the relevant data including demographic data was entered in a pre designed proforma and was evaluated using SPSS version 17.

RESULTS:

A total of 80 patients having uncomplicated breech fetuses at 36-42 weeks were included in the study. Mean age of the patients was 29.37±7.04 years . Twenty nine were primigravida (36.25%), 38(47.5%) multigravida and 13(16.25%) were grand multi gravida. Success rate was 83.7%.There was no serious maternal or fetal complications except 2(2.5%) fetuses having transient bradycardia.

CONCLUSION:

Terbutaline is a safe tocolytic drug for ECV in terms of successful version to cephalic presentation.

KEY WORDS:

Terbutaline, external cephalic version(ECV), breech presentation

INTRODUCTION:

At term the incidence of breech presentation is 3-4%[1]. There is controversy regarding the optimal route of delivery for breech presentation. In developed countries the rate of elective cesarean section for breech presentation is very high[2]. The Term Breech Trial (Hannah et al, 2000), was terminated early in 2000 because there was significant reduction in the short term outcome e.g. perinatal mortality and morbidity with elective caesarean section for breech presentation while there was no increase in serious maternal complications[3]. However because of this there was an abrupt rise in the previous scar and its associated complication. In order to decrease the incidence of previous scar, RCOG and ACOG now recommend ECV as first option in selected cases.[4,5] According to ACOG the decision regarding the mode of delivery for breech presentation at term are dependent on health care

provider's expertise and experience. ECV is a low cost and low tech procedure which can lower the abdominal delivery rates and its associated complications.

In a 2008 meta-analysis ,the documented success rate of ECV was 53%[6]. There are certain factors which increases the success of ECV e.g. parity , gestational age, amount of liqour, type of breech and relaxed uterus[7,8,9].Another meta-analysis showed that ultrasound factors such as posterior placenta, complete breech and amniotic fluid index of 10cmor more were associated with successful ECV[10].It is also known that tocolytics increase the success rate of ECV. Breech presentation was reduced by 41% by ECV without using tocolytics while with tocolytics the success rate was 57%[11]. Different strategies have been used to relax the uterus e.g. glyceral trinitrate, hypnotics, regional anaesthesia, fetal acoustic stimulation and β sympathomymetic drugs.[12,13] Fernandez et al has documented 52% success rate with 0.25mg subcutaneous Terbutaline as compared to 27% with placebo[14].

We planned to conduct this study as limited studies are available in our setup to see the effect of Terbutaline in the external cephalic version and this might help others regarding management of breech presentation.

METHODOLOGY:

This prospective Observational study was conducted in Peshawar Health Center(PHC) from 15th August 2015 to 9th November 2016. A total of 80 patients having singleton breech presentation from 36-42 weeks were included in the study. While those having any contraindication to vaginal delivery e.g. placenta previa/ abruption , those having non reassuring /category 3 CTG, anomalous fetus, bad obstetric history, IUGR, multiple pregnancy and maternal refusal were excluded from the study . Patients having previous one cesarean section were included in the study.

After selection, informed consent was taken from all the parturients. Detail clinical and ultrasound examination were done to exclude any contraindication for ECV and also to confirm fetal wellbeing, back of the fetus and placental localization. All the ECV procedures were done in a fully equipped set up having facilities for CTG, emergency cesarean section and NICU facilities. Before starting the procedure bladder was emptied and non stress test was done to ensure fetal wellbeing. Fifteen minutes before starting the procedure 0.25mg Terbutaline was given s/c. Patient was put in supine position with 15 degree left lateral tilt and ECV was performed in a routine /standard way by a single operator. First forward roll was tried and if unsuccessful then backward flip. Fetal heart sounds were monitored by ultrasound during the procedure. After successful version, patient was monitored for 20-40 minutes for any maternal and fetal complication e.g. PROM, contractions, APH and fetal distress . Rh –ve patients were given anti D prophylaxis. Procedure was halted if no success occurred in 15-20 minutes or maximum of 3 attempts were made .

All the relevant data was entered in a pre-designed proforma and analyzed using SPSS version 17.The outcome measure included success rate of ECV in terms of conversion from breech to cephalic at the end of the procedure confirmed clinically and by ultrasound while secondary outcome measures included any maternal and fetal complication.

RESULTS:

A total of 80 patients having uncomplicated breech fetuses at 36-42 weeks were included in the study. Out of 80 patients 67(83.7%) underwent successful ECV while 13(16.25%) had unsuccessful ECV. Mean age of the patients was 29 years. Twenty nine were primigravida(36.25%), 38(47.5%) multigravida and 13(16.25%) were grand multi gravida. Most of the patients (76.25%) were having period of gestation between 36-40 weeks. In successful ECV group 37(55.22%) were having flexed breech and 30(44.77%) were extended, while in the failed ECV group only 1(7.69%) was having flexed breech and 12(92.3%) had extended breech. There were no serious maternal or fetal complications except 2 (2.5%) fetuses having transient bradycardia.

Table 1: Demographic details of the sample (n=80)

		Number (percentages)
Age(years)	≤20	11(13.75%)
	21-30	33(41.25%)
	31-39	28(35%)
	≥40	8(10%)
Parity	Nullipara	29(36.25%)
	Multipara	38(47.5%)
	Grandmultipara	13(16.25%)
Gestational age(weeks)	≥36-40	61(76.25%)
	>40-42	19(23.75%)

TABLE 2: Complications of ECV (n=80)

Complications	Percentages
Antepartum haemorrhage	0(0%)
Premature contractions	0(0%)
Premature rupture of membranes	0(0%)
Fetal distress	2(2.5%)

TABLE 3: Factors affecting the success of ECV (n=80)

Factors		Successful ECV	Unsuccessful ECV
Placental location	Anterior	14(20.8%)	7(53.8%)
	Posterior	14(20.8%)	5(38.46%)
	Fundal	39(58.2%)	1(7.69%)
Spine location	Right	32(47.76%)	8(61.53%)
	Left	35(52.2%)	5(38.46%)
Type of breech	Flexed	37(55.22%)	1(7.69%)
	Extended	30(44.77%)	12(92.3%)

DISCUSSION:

Breech is the commonest mal presentation at term. RCOG and ACOG recommend ECV in all uncomplicated breech presentations. Different techniques have been used to relax the uterus in order to improve the success of ECV. Terbutaline sulfate(Britanyl) has been used successfully in ECV.

In our study the success rate of external cephalic version was 83.7%. Studies have reported 35-86% success rate of ECV, with an average figure of 50%[15]. Tasnim N et al has documented 40.5% success with salbutamol, while Mohamed Ismail NA et al has documented 58.1% in their sudies[16,17]. Similarly in a randomized placebo controlled trial the rate of successful external cephalic version with Terbutaline was 52% as compared to 27% with placebo (p = 0.019)[14]. In a double blind randomized trial by Collaris and Tan, subcutaneous terbutaline was compared to nifedipine. Success rate of ECV was higher in the terbutaline group as compared to nifedipine (52% vs 34%)[18]. Subcutaneous terbutaline significantly increases the success rate of external cephalic version and therefore decreasing the number of cesarean section for breech presentation[19].

The failure rate in our study was 13%.Extended breech presentation was present in In 92.3% of the failed cases, while only 7.69% were having flexed breech. Our results were consistent with those of Arif W et al, reporting 85% success with flexed breech presentation as compared to 16% in extended breech presentations, this shows that failure rate relating to fetal position is not influenced by tocolysis[20].

Although studies have shown maternal and perinatal complications associated with external cephalic version including rupture of membranes, ante partum haemorrhage, CTG abnormalities requiring emergency cesarean section.[21,22] In our study there was no major maternal or fetal compilcations except transient bradycardia in 2.5% cases which resolved spontaneously. In a review study including 7377 patients, transient bradycardia was observed in 6% of cases while persistent abnormality occurred in 0.4% cases.[23]

There are certain factors which increases the success of ECV, one of which is location of placenta. In a meta analysis it was shown that anterior placental location was associated with less successful ECV, whereas in women with posterior placenta, ECV was successful more often (OR, 1.9).While fundal and lateral placental locations were not associated with ECV outcome. In our study 58.2% of the successful cases were associated with posterior placenta. In the same study, position of the fetal spine had an important role in the success of ECV. Anterior location of spine tended to be associated with successful ECV(OR, 4) while lateral and posterior spine were not associated with ECV outcome(OR, 1.1 and 0.9)[24].In our study success of ECV was not influenced by the position of fetal spine.

COCLUSION:

Terbutaline 0.25mg given s/c before ECV significantly increased the initial success rate of version to cephalic presentation. It is a safe drug as there were no significant maternal and fetal complications.

REFRENCES:

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