# ECV: Easy as 1,2,3? Success Rates of External Cephalic Version Performed by Junior Doctors

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## INTRODUCTION/AIM:

Breech presentation of the fetus occurs in 3-4% of pregnancies at term. (1) Increasing numbers of Caesarean sections for breech presentation have occurred in response to the 'Term Breech trial' which reported significantly lower rates of perinatal mortality, neonatal mortality and serious neonatal morbidity for breech babies delivered by elective caesarean section compared to by vaginal birth. (2) However, there are well-recognised risks of elective caesarean section including infection, injury to nearby organs, VTE, increased length of hospital stay, abnormal placentation and need for repeat caesarean sections in future pregnancies. A safe alternative to elective caesarean section for breech presentation is therefore paramount to both fetal and maternal wellbeing.

External cephalic version (ECV) is a method by which the fetus is turned from beech to cephalic presentation via abdominal manipulation. Successful ECV thus enables women who would have previously been recommended an elective CS the opportunity to try for a vaginal birth. ECV is most often attempted by highly skilled senior physicians. Therefore, the widely accepted and published success rates of ~40% in nulliparous and ~60% for multiparous women, represents the success rates of experienced clinicians. (1)

There are minimal studies looking at the ECV success rate by junior, inexperienced clinicians. Currently FRANZCOG trainees aim to learn ECV by level 4. Our study aims to determine the success rates of ECV performed by junior registrars and a junior consultant. If we can show similar success rates, there may be reason to consider training doctors to perform ECV at an earlier stage in their career.

**We retrospectively analysed 30 cases of junior medical staff attempting ECV, to determine whether success rates were similar to those published.**

## METHODS:

The study took place at a small secondary hospital in Victoria, accredited for FRANZCOG training.

We analysed the outcomes of all patients who had ECV between 2018 and 2020. The doctors performing ECV during this time period were junior registrars (both accredited and unaccredited) and one junior consultant. They had received academic training ECV, including theory and demonstration, but had minimal practical experience. Prior to 2018, ECV was not being performed at this hospital due to lack of trained personnel.

Bedside USS performed to confirm breech presentation, AFI & placental position.

Women were given written information, had a discussion with the doctor and signed a written consent.

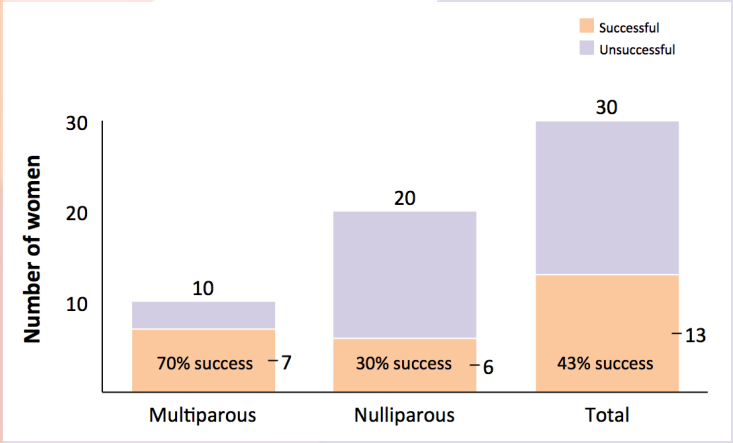
CTG was performed and terbutaline 500mcg subcut. administered 15 minutes prior to ECV

ECV was performed by standard practice.

If Rh negative, bloods (G&H Kleihour) were taken and anti-D was given

CTG for 60 minutes post ECV. Patient discharged if CTG normal, they tolerated diet, passed urine, had no PV loss, bleeding or contractions.

If ECV was unsuccessful the registrar would discuss alternative birthing options including elective LUSCS vs. breech vaginal delivery.




## RESULTS:

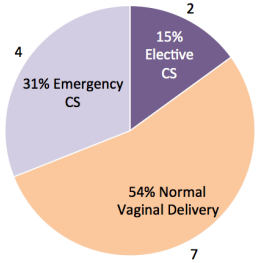
There were 30 patients in total, 20 were nulliparous and 10 were multiparous.
Average age: 31.7 years
Average BMI: 24.4.
Gestation range: 37+0 to 38+2.

The total success rate of ECV performed by junior doctors during this time period was **43% (13/30).** This can be further broken down into the success rate for **nulliparous women, which was 30% (6/20)** and **multiparous women, which was 70% (7/10).**

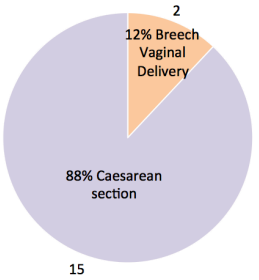
Of the successful patients, 7 women achieved **a normal vaginal delivery (54%),** and **6 (46%) had a caesarean section** (4 had emergency caesarean section (31%), and 2 had an elective caesarean section (15%)).
Of the unsuccessful ECVs, **2 women had a breech vaginal delivery (12%)** and **15 women had a caesarean section (88%).** The average BMI of successful ECV was 22, and the average BMI for unsuccessful was 26.

There were no recorded maternal or fetal adverse outcomes.

**Successful EVC (total=13)**




**Unsuccessful EVC (total=17)**




## DISCUSSION:

There are minimal recent studies looking at ECV success by junior, inexperienced clinicians. In 1997, Teoh et al. studied the effect of the learning curve on the outcome of ECV. They studied the success rate of a single clinician performing 80 consecutive cases of ECV, and found that the learning curve was most steep for the first 20 cases (success being 45%). The success rate for the second 20 cases was then 60%, and improvement plateaued after this. (3) In 2017 Kim et al further evaluated the learning curve using cumulative sum analysis. They found that to achieve a consistent 50% success rate in nulliparous patients, 57 cases are needed, and for a 70% success rate, 130 cases needed. Otherwise they concluded that after performing only 8-10 cases of ECV, one can achieve a success rate of >50% for multiparous women. (4)

More recently in the UK and Netherlands, midwives have begun to receive training in ECV. A study by Beuckens et al in 2015 observed 2546 cases of ECV performed by 68 Dutch midwives, demonstrating a success rate of 47% (34% nulliparous and 66% multiparous women), again comparable to rates observed for consultant obstetricians. (5)

Our study demonstrated that junior clinicians had similar success rates in multiparous women as experienced clinicians., in keeping with data from Teoh et al. and Kim et al. Conversely, this study demonstrated that junior clinicians had a lower rate of ECV success in nulliparous patients, than that published in the literature.

Our study would clearly be improved with greater patient numbers, and across different hospitals or health networks. With greater numbers, we could also look at factors affecting junior clinician success or failure, such as placental location and type of breech presentation.

## CONCLUSION:

Through this small study, we demonstrated that relatively junior doctors were able to achieve the same ECV success rate for multiparous women as experienced clinicians (70%). However, junior doctors appeared to have less success with nulliparous women (30%) than the published success rates of senior doctors.

Our data supports the theory that with increased opportunity, junior doctors could quickly become proficient in the skill of external cephalic version. This is important in order to reduce numbers of breech vaginal delivery and unnecessary elective caesarean section, and hopefully in turn improve fetal and maternal outcomes.

## References: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