

# Intravaginal prostaglandin E2 gel versus Foleys balloon catheter for cervical ripening prior to induction of labour

Dr. Toni Tse<sup>1</sup>, Ankita Bhakta<sup>2</sup>, Dr. Clare Wong<sup>1,2</sup>

1. Blacktown Mt Druitt Hospital, Blacktown, Sydney
2. Western Sydney University, Sydney

## Abstract

### Introduction

Recent studies suggest that Foleys balloon catheter is just as effective with less side effects compared with prostaglandin E2 gel (PGE2) for cervical ripening. This study reviewed the safety and efficacy of Foleys balloon catheter as the default method of cervical ripening compared with PGE2.

### Methods

All term pregnant women who underwent an induction of labour (IOL) with cervical ripening at Blacktown Hospital were identified retrospectively from October 2013 – February 2016. Patients with multiple pregnancies, lethal congenital abnormalities, fetal demise or CTG abnormalities prior to cervical ripening were excluded.

### Results

781 patients were included, of which 450 were induced with PGE2 and 331 with Foleys balloon catheter. The use of PGE2 was associated with a higher rate of normal vaginal delivery at 52.9% compared with the use Foleys balloon catheter at 42.2% ( $p < 0.05$ ). PGE2 for cervical ripening resulted in a greater change in Bishop scores ( $p < 0.05$ ). The use of PGE2 also decreased the induction to delivery times ( $p < 0.05$ ) with a mean difference of 91 minutes between the two groups and increased the likelihood of spontaneous vaginal delivery without syntocinon (14.3% vs 0.9%). There were no significant differences in maternal or fetal complications between the two groups.

### Discussion

This challenges current understanding regarding equal efficacy of PGE2 and Foleys balloon catheter for IOL. PGE2 provides significant advantages of higher rates of vaginal delivery and shortened labour, suggesting it should be continued as the standard method of cervical ripening. This is achieved without an increased rate of maternal or fetal complications.

## Background

Induction of labour is a common procedure in obstetrics and occurs in 28% of pregnancies. The most common indication for induction of labour is prolonged pregnancy followed by prelabour spontaneous rupture of membranes.<sup>1</sup> Cervical ripening can be achieved through a chemical procedure using Prostaglandin E2 gel (PGE2) or a mechanical method utilising Foleys balloon catheter.

Several studies have compared these methods of cervical ripening, however results have not conclusively demonstrated superior efficacy or safety of either PGE2 or Foleys balloon catheter.

Foleys balloon catheter replaced PGE2 as the default method of cervical ripening at Blacktown hospital in October 2014.

## Objectives

The aim of the study is to review the safety and efficacy of Foleys balloon catheter vs PGE2.

The primary outcome is mode of delivery with a subanalysis on indication for caesarean section and instrumental delivery.

Secondary outcomes include maternal and foetal complications, changes in Bishop score and the interval of induction to delivery.

## Methods

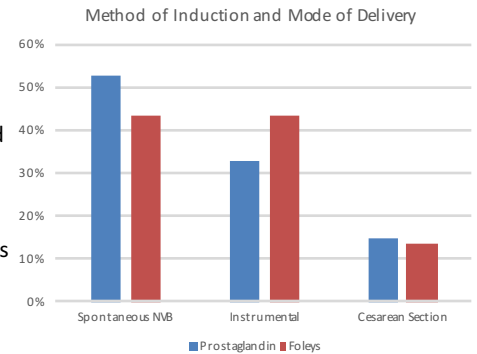
A retrospective cohort study was undertaken of all term women who underwent IOL with cervical ripening at Blacktown hospital from October 2013 - February 2016.

Women with preterm deliveries, multiple pregnancies, induction of labour for lethal congenital abnormalities or fetal demise, CTG abnormalities prior to cervical ripening and induction of labour not requiring cervical ripening were excluded from this study.

Data was collected from hospital medical records regarding method of cervical ripening, Bishop score, interval of induction to delivery, mode of delivery and maternal and fetal side effects.

## Results

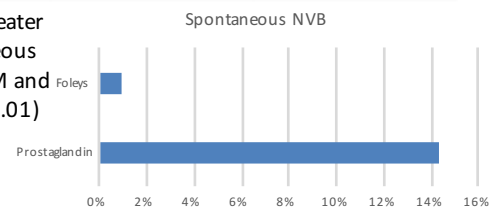
1. PGE2 resulted in significantly more normal vaginal delivery (NVD) and significantly less instrumental deliveries as compared to Foleys balloon catheter ( $p < 0.05$ )



2. Strong positive correlation between the use of PGE2 and greater changes in Bishop's score ( $p < 0.01$ )
3. No statistically significant differences in maternal and fetal outcomes between PGE2 and Foleys
4. Strong positive correlation between the use of PGE2 and decrease in induction to delivery interval ( $p < 0.01$ )

	Induction to Delivery Interval (minutes)	
	Mean	Median
PGE2	473.5	426
Foleys	516.2	483

5. PGE2 achieved greater rates of spontaneous NVD without ARM and syntocinon ( $p < 0.01$ )



## Conclusion

The results of this study demonstrates that PGE2, compared to Foleys balloon catheter, appears to be the superior mode of cervical ripening, with an increased rate of spontaneous NVD, decreased induction to delivery time and decreased incidence of instrumental deliveries. There was no difference in maternal and fetal complication rates or caesarean section rates. These outcomes suggest that PGE2 should be continued as the standard method for cervical ripening.

## References

- [1] Australian Institute of Health and Welfare 2015. Australia's mothers and babies 2013—in brief *Perinatal statistics series no. 31*. Cat no. PER 72. Canberra: AIHW