

Original Article

FREQUENCY OF CAESAREAN SECTION IN ELECTIVE INDUCTION OF LABOUR VERSUS EXPECTANT MANAGEMENT IN POST-TERM PREGNANCY

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Objective: To compare the frequency of caesarean section in elective induction of labour versus expectant management in post-term pregnancy.

Methods: Three hundred and twenty patients fulfilling inclusion/exclusion criteria from obstetrics outpatient department were recruited by history and examination. Two groups were generated on random basis, Group-A the women for induction of labour by prostaglandin E2 while Group-B on expectant management. Both groups were followed till delivery and mode of delivery in both groups were recorded.

Results: In this study, out of 386 cases, it shows that 19.17%(n=37) cases in Group-A and 30.57%(n=59) in Group-B had caesarean section, p value was 0.009, showing a significant difference.

Conclusions: We concluded that the frequency of caesarean section is significantly lower in elective induction of labour when compared with expectant management in prolonged pregnancy.

Keywords: post-term, Induction, caesarean section.

Introduction

The incidence of post-term pregnancy is between 4-14%.¹ Induction of labour is carried out in over 20% of pregnancies in developed countries for post-term pregnancies >41 weeks' gestation.² The effect of induction of labour compared with expectant management has provided conflicting results. The rationale of the study is that the statistics regarding cesarean section in expectant and elective induction for the management of post term pregnancy are significantly variant. Thus, if women who are induced are compared to women experiencing spontaneous labor, gestational age is a confounding variable. While older studies did not generally use multivariable regression techniques to control for confounding bias, more recent studies have done so.² Although, this adjustment can decrease the bias in the effect estimates of labor induction on a delivery, it does not entirely eliminate it. In contrast to these observational studies, there are a number of randomized controlled trials of induction of labor which found either a decrease or no difference in caesarean delivery rates. Recent meta-analysis showed that induction of labour on maternal or fetal indication in women with intact membranes reduces the risk of Caesarean section, thus leaving the question unanswered if induction at 41 weeks in obstetrical low risk women gives better perinatal outcomes and maternal outcomes than expectant

management until 42 weeks.⁷ Because of the uncertainty regarding the management of post-term pregnancy, there is no consensus on the optimal timing of induction, leading to practice variation.

Methods

It is a comparative randomized control trial conducted in Department of Obstetrics and Gynaecology, Lahore General Hospital, Lahore for the period of 6 months; 20-01-2017 to 19-07-2017 after the permission of ethical review committee. Sample size of 386 females (193 in each group) is calculated with 80% power of test, 5% level of significance and by taking expected percentage of caesarean delivery in both groups i.e. 33.8% in induction group compared to 21.1% in expectant management group for the management of post term pregnancy. Females of age 18-45yrs with singleton pregnancy from primigravida to gravida 5 after 41 weeks of gestational age were included in this study. All contraindications for induction and also the medical disorders in pregnancy were taken in account of exclusion criteria. Two groups were selected on random table basis, Group-A was allotted to the women for induction of labour by prostaglandin E2 while Group-B was allotted for expectant management. In Group-A women received 3 mg prostaglandin tablet (Prostine E2) in the posterior fornix, repeating the dose if necessary, depending on the Bishop score. Oxytocin augmentation was started

with unsatisfactory progress of labour. In Group-B, women were managed expectantly daily in the hospital by cardiotocography (CTG) and Biophysical profiling. In case of no onset of labor pains or presence of any abnormalities in fetal heart rate monitoring evaluation or amniotic fluid, labour was induced or decision for cesarean section was taken. Both groups were followed till delivery and mode of delivery in both groups were recorded on a pre-designed performa. The data was entered and computed on SPSS-11. Age, parity and BMI were calculated as mean and SD. Frequency and percentage was calculated for qualitative variable i.e. cesarean delivery. Chi-square test was applied to compare the frequency of C-section in two groups. The data was stratified for age, parity and BMI to control the effect modifiers. Post stratification chi square test was applied to check the significance with p value <0.05 as significant.

Results

A total of 386 cases (193 in each group) fulfilling the inclusion and/exclusion criteria were enrolled to compare the frequency of caesarean section in elective induction of labour versus expectant management in prolonged pregnancy. Age distribution of the patients was done, that showed 67.36%(n=130) in Group-A and 68.39%(n=132) in Group-B were between 18-30 years of age while 32.64%(n=63) in Group-A and 31.61%(n=61) in Group-B were between 31-45 years of age, mean+SD was calculated as 27.01±5.44 years in Group-A and 26.96±5.33 years in Group-B. Parity distribution of the patients was done, it showed that 74.61%(n=144) in Group-A and 72.02%(n=139) in Group-B were between 1-3 paras while 25.39% (n=49) in Group-A and 27.98%(n=54) in Group-B were between 4-5 paras, mean+SD was calculated as 2.66±1.23 paras in Group-A and 2.78±1.30 paras in Group-B. Mean BMI of the patients was calculated as 27.70±4.29 in Group-A and 27.88±4.31 in Group-B. Comparison of frequency of caesarean section in elective induction of labour versus expectant management in Post term pregnancy was done, it showed that 19.17%(n=37) cases in Group-A and 30.57%(n=59) in Group-B had caesarean section while 80.83%(n=156) in Group-A and 69.43%(n=134) cases in Group-B were not delivered through caesarean section, p value was 0.009, showing a significant difference. **(Table-1)** The data was stratified for age, parity and BMI in **Table-2-4** respectively.

Discussion

Post-term pregnancy is associated with increased perinatal morbidity and mortality. Therefore post-term pregnancy is considered as a high-risk condition which requires specialize surveillance and induction of labour. According to one study review, labour induction doesn't increase the risk of Caesarean section in women with a gestational age of 41 or 42 completed weeks.⁶ Recent observational studies also

Table-1: Comparison of frequency of cesarean section in elective induction of labour versus expectant management in post term pregnancy (n=386).

Cesarean Section	Group-A (n=193)		Group-B (n=193)	
	No. of Pts.	%	No. of Pts.	%
Yes	37	19.17	59	30.57
No	156	80.83	134	69.43
Total	193	100	193	100

P value= 0.0096

Table-2: Stratification for cesarean section regards to age (n=386).

Group	Cesarean Section		P-value
	Yes	No	
Age: 18-30 years			
A	20	110	0.001
B	42	90	
Age: 31-45 years			
A	17	46	0.91
B	17	44	

Table-3: Stratification for cesarean section regards to parity (n=386).

Group	Cesarean Section		P-value
	Yes	No	
PARA: 1-3			
A	26	118	0.01
B	43	96	
PARA: 4-5			
A	11	38	0.40
B	16	38	

Table-3: Stratification for cesarean section regards to BMI (n=386).

Group	Cesarean Section		P-value
	Yes	No	
BMI:< 1-3			
A	22	102	0.006
B	38	83	
BMI:>30			
A	15	54	0.31
B	21	51	

showed that elective induction leads to similar increased maternal and fetal risks as induction on medical indication, in comparison to spontaneous onset of labour.⁸ Recent meta-analysis showed that induction of labour on maternal or fetal indication in women with intact membranes reduces the risk of Caesarean section, thus leaving the question unanswered if induction at 41 weeks in obstetrical low risk women gives better perinatal outcomes and maternal outcomes than expectant management until 42 weeks.^{8,9} In this study, out of 386 cases (193 in each group), 67.36%(n=130) in Group-A and 68.39%(n=132) in Group-B were between 18-30 years of age while 32.64%(n=63) in Group A and 31.61%(n=61) in Group-B were between 31-45 years of age, mean \pm SD was calculated as 27.01 \pm 5.44 years in Group-A and 26.96 \pm 5.33 years in Group-B, mean BMI of the patients was calculated as 27.70 \pm 4.29 in Group-A and 27.88 \pm 4.31 in Group B. In our study comparison of frequency of caesarean section in elective induction of labour versus expectant management in post term pregnancy showed that 19.17%(n=37) cases in Group-A and 30.57%(n=59) in Group-B had caesarean section while 80.83%(n=156) in Group-A and 69.43%(n=134) cases in Group-B were not delivered through caesarean section, p value was 0.009, showing a significant difference. A local study by A. Arif patients with prolonged pregnancy undergoing elective induction at 41 weeks of gestation recorded 15% caesarean section.⁷ George Daskalakis and others recorded 34.4% of the cases in expectant management had caesarean section.⁸ In

a 2012 Cochrane Review of randomized trials in which a policy of induction “at or beyond term” was compared with expectant management, the caesarean delivery rate was 11 percent lower in the induction group (relative risk [RR] 0.89, 95% CI 0.81-0.97; 21 trials from 1969 to 2008, n = 8749 women).⁴ Importantly, 17 of the 21 trials involved women >41 weeks of gestation post-term pregnancy with expectant management.¹¹ Another recent study determined the effects of induction of labour in post-term pregnancies on the mode of delivery, maternal and neonatal outcome and recorded that the rate of caesarean deliveries was significantly higher for the induction of labour group (33.8 vs. 21.1%, p < 0.001).⁹ These findings are in contrast with our results. Blair G. Darney and others recorded that the caesarean delivery rate was 16%, perinatal mortality was 0.2%, and neonatal intensive care unit admission was 6.2% (N=362,154). The findings of our study in accordance to other studies justify the hypothesis that “there is a difference in frequency of the caesarean section in elective induction versus expectant management for post-term pregnancy”. However, multi-center studies should be conducted so that the biasness may be controlled and further results may be validated.

Conclusion

We concluded that the frequency of caesarean section is significantly lower in elective induction of labour when compared with expectant management in prolonged pregnancy.

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