



STUDY OF OBSTETRIC OUTCOME IN ASSOCIATION WITH HEIGHT OF WOMEN

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ABSTRACT

Maternal height along with fetal weight has a great influence on the mode of delivery. This study is aimed to find the obstetric outcome in short stature pregnant females. So 250 pregnant primi patients were randomly selected. After considering the inclusion and exclusion criteria, 250 cases were divided in two groups. One group of 144 cases who underwent emergency LSCS was the study group, and rest 106 who gave birth vaginally was the control group. Results of the two groups compared in relation to obstetric outcome and fetal weight.

KEYWORDS : Obstetric outcome, short stature woman

INTRODUCTION

During the past few years attempts are made to identify risk factors that could place women at higher level of care and so as to improve their obstetric outcome. A physical parameter that was highlighted years ago but has received less attention is maternal height. Short stature has drawn attention of obstetricians throughout world because of its potential in causing significant adverse birth outcomes.

The stature of an individual is decided by factors like nutritional status, genetic, developmental, racial, evolutionary, endocrinal, skeletal, socioeconomic status. A short stature woman is likely to have contracted pelvis, cephalopelvic disproportion, malpresentations, prelabour rupture of membrane, obstructed labour, rupture uterus with an increased incidence of instrumental and operative deliveries. There is also an increased incidence of perinatal morbidity and mortality. In developing country like India majority of rural women are ill nourished and belong to poor socioeconomic status, hence are short stature. According to WHO, Ht < 140 cm has been taken as a high risk for pregnancy. In western countries, Ht < 150 cm has been taken as short stature. But in India height < 145 cm has been taken as short stature.

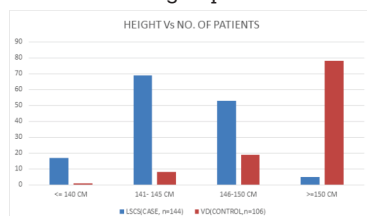
MATERIAL AND METHOD

The patients are recruited from the OPD and LABOUR ROOM of the O & G Dept. of JLNMC, Bhagalpur, Bihar for a study period of one year. It was a cross-sectional, case-control study. 250 full term primigravida without any obstetric and medical complications were randomly selected for the study. All the cases were with the gestational age ≥ 37 weeks who had spontaneous onset of labor

EXCLUSION CRITERIA : Those pregnancies with medical or obstetric complications or those with fetal anomalies or fetal death or elective Cesarean Section excluded from the study.

Patient asked to sign the consent form once they have understood the content completely.

After considering these inclusion and exclusion criteria 250 cases elected, out of which 144 cases underwent emergency LSCS formed the study group, and rest 106 who gave birth vaginally formed the control group.



OBSERVATION

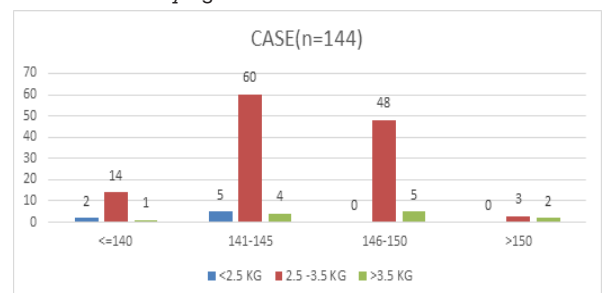
Distribution Of Patients As Per Height In Both Groups

HEIGHT(CM)	CASE(n=144)	CONTROL(n=106)
<=140	17(11.80%)	1(0.94%)
141 TO 145	69(47.92%)	8(7.55%)
146 TO 150	53(36.81%)	19(17.93%)
>150	5(3.47%)	78(73.58%)

In present study, out of 144 patients from the study group, 17 (11.80%) had the height <140 cm, 69 (47.92%) between 141 and 145 cm, 53 (36.81%) had height 146-150 cm and 5 (3.47%) had the height >150 cm. In the control group, out of 106 patients, 1 (0.94%) patient belonged to <140 cm, 8 (7.55%) between 141 and 145 cm, 19 (17.93%) patients in between 146 and 150 cm and rest 78 (73.58%) had height > 150 cm. The difference between study group and control group was found to be statistically significant ($P < 0.05$). In the study group, mean height was 144.78 cm, while in the controls it was 156.46 cm.

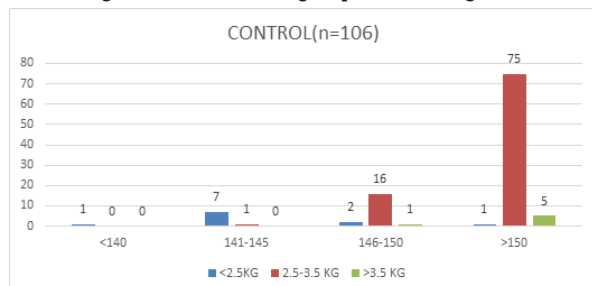
HEIGHT (CM)	MODE OF DELIVERY			Total
	Spontaneous vaginal delivery	Instrumental delivery	LSCS	
<=145	7(7.33%)	2(2.15%)	86(90.52%)	95(100%)
146 to 150	16(22.22%)	3(4.16%)	53(73.62%)	72(100%)
>150	69(83.13%)	9(10.84%)	5(6.03%)	83(100%)

95 patients had height <145 cm. Out of them 7 (7.33%) delivered spontaneously vaginally, 2 (2.15%) cases had undergone instrumental delivery, while 86 (90.52%) cases undergone caesarean delivery. In the maternal height of 146-150 cm among 72 cases, 16 (22.22%) cases of spontaneous vaginal delivery, 3 (4.16%) cases instrumental delivery while 53 (73.62%) of cases caesarean delivery done. In the maternal height of ≥ 150 cm out of 83 cases, 69 (83.13%) cases delivered spontaneous vaginally, 9 (10.84%) instrumental delivery while 5 (6.03%) cases LSCS done. Hence it can be seen that with the decrease in maternal height, chances of caesarean delivery increases. Using Chi-square test, ($P < 0.05$) the difference was found statistically significant.



Fetal weight	Case(n=144)	Control (n=106)
<2.5 kg	7	11
2.5 to 3.5 kg	125	92
>3.5 kg	12	3

In the present study, mean estimated weight in the study group was 2928 g while in the control group it was 2756 g.



By applying Chi-square test, the difference was found to be significant ($P < 0.05$). Women with lesser height and more baby weight are more likely to go for caesarean delivery.

Higher the maternal height range (>150 cm) and lower estimated fetal weight range (<2.5 kg) almost all babies were delivered vaginally. In the same way, lower maternal height range (<145 cm) and higher estimated fetal weight range (2.5-3.5 kg), almost all babies are delivered by caesarean section.

Height (cm)	LSCS	VD	Total
≤ 145	86(90.52%)	9(9.48%)	95(100%)
> 145	58(37.41%)	97(62.59%)	155(100%)

So it can be concluded that the incidence of caesarean delivery in women with height 145 cm or less was significantly higher (90.52%) than those with height more than 145 cm (37.41%).

Thus, women who are ≤ 145 cm have more risk of caesarean delivery when compared to females of more than 145 cm height.

DISCUSSION

The present study suggests that women of short stature belong to a higher risk group regarding obstetric outcome. The rate of LSCS in short statured women was significantly higher than that of taller women (90.52% vs 9.48%). Mahmood et al⁴ also found a significantly higher rate of LSCS in women of short stature. Kappel et al³ and by LY Hin et al¹⁰ observed that the prevalence rate for emergency LSCS was 3-fold higher in short mothers. The vaginal delivery rate in short mothers was lower than that in taller women (9.48% vs 62.59%). Similar observations were made by Desai et al⁶.

Baird¹³ postulates that every female has a potential height, which decided by factors such as race, genetics, and geographic distribution. However, there occur certain insults that are exclusively dominant, if it is so during her age of development. As a result of which she becomes short stature or long. In the present study, mean estimated weight in the study group was 2928 g while in the control group it was 2756 g. Females with lesser height and larger baby were more likely to go for the caesarean section. Karltreinder¹⁴ also found that taller females tend to produce heavier children in contrast to the shorter females who tend to produce lighter ones. Babies weighing >3.5 kg were more in tall mothers compared with short mothers. But the difference in the incidence of <2.5 kg in both groups was almost similar. Similar observation was made by T Kamaldoss et al (1992)¹⁵ where the incidence of LBW babies among mothers with height < 145 and > 145 were 29.7% and 24.2% respectively.

In short mothers, rate of LSCS increased significantly with increase in birth weight of the baby. The possibility of vaginal

delivery decreases as the baby weight increases in mothers with short stature. In the present study, 9 cases (9.48%) of the short mothers delivered vaginally. Among them 8 had babies of <2.5 kg and 1 had 2.8 kg baby were delivered through. This explains the fact that vaginal delivery is possible in short women when they have small babies.

CONCLUSION

Poor obstetric outcomes are commoner among short statured women. Mode of delivery is influenced by maternal height and fetal weight. The short statured females are more likely to undergo LSCS for CPD. Even though significant number of larger babies is born to taller mothers but this does not signify that short mothers are at risk of having LBW babies. In mothers with short stature, rate of LSCS increases and vaginal delivery decreases as the birth weight of the baby increases. The need for assessment of height, partographic monitoring, prompt diagnosis of cephalopelvic disproportion and early decision of caesarean section is needed to prevent the adverse maternal and perinatal morbidity and mortality in short statured mothers.

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