

## Original article

# Comparative study of maternal and fetal outcome in pregnant women aged 15-19 yrs

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### Abstract

**Objectives:** To know the maternal and fetal outcome in teenage pregnant women aged 15 – 19yrs. **Material & Methods:** This is an observational retrospective study carried out in the Department of Obstetrics & Gynecology of Maharajah's Institute of Medical sciences, Nellimarla. The duration of the study was from January 2012 – January 2014. 662 pregnant women in the age group 15 – 19yrs were recruited as study group and 600 pregnant women aged 20 – 25 yrs were recruited as control group and data regarding the various maternal and fetal complications was collected and analyzed. **Results:** It was observed that maternal complications such as anemia and caesarean sections were high in teenage group of pregnant women when compared to the control group. Among the fetal complications prematurity low birth weights and stillbirth rates were found to be high. **Conclusion:** Pregnancy in teenage women is associated with higher rate of both maternal and fetal complications and hence best avoided.

**Key words:** Teenage pregnancy, maternal outcome, fetal outcome

### Introduction

Teenage pregnancy is one of the most important social and public health problem all over the world. According to WHO, 16 million adolescents between 15yrs -19yrs give birth annually, accounting for 11% of births worldwide. Lowest rates have been noted in Netherlands (14/1000)<sup>1</sup>. Highest rates have been noted in The U.S (52.3/1000)<sup>2</sup> in the year 1997.

According to WHO statistics in 2014 adolescent pregnancy rate was 49/1000 girls worldwide

In India, prevalence of teenage pregnancy is high, inspite of adolescent marriage being a legal offence. Incidence is highest in Jharkhand 28%, West Bengal 25%, Bihar 25%, Andhra Pradesh 18%. It is lowest in Himachal Pradesh 3%<sup>3</sup>. This study has been taken up as teenage pregnancy is fairly common in Vizianagaram Dist.

The teenage pregnant women face complications like anemia, unsafe abortions, preeclampsia, eclampsia & increased cesarean rates.

The fetal complications in a teenage pregnancy are premature labor, low birth weight neonatal death, jaundice and respiratory distress syndrome in the new born.

### MATERIAL AND METHODS

This retrospective observational study was conducted in the department of Obstetrics and Gynecology of

Maharajah's Institute of Medical Sciences, Nellimarla. The study period was from January 2012 - January 2014. Pregnant women in the age group 15-19 yrs were recruited as study group and pregnant women in the age group 20-25 yrs were recruited as control group. Data regarding various maternal and fetal complications was collected using a predesigned proforma (annexure 1) and analyzed. The incidence of maternal complications such as anemia, preeclampsia, eclampsia, preterm labor, cesarean section was collected and the incidence of fetal complications such as prematurity, respiratory distress syndrome, jaundice and neonatal mortality was compared in both groups

### Inclusion Criteria

All pregnant women aged between 15-19 yrs were included as study group

600 pregnant women aged between 20-25 yrs were included as control group.

### Exclusion Criteria

Teenage pregnant women with cardiovascular disorders and twin gestation were excluded.

### Observations and results

Total number of pregnant women during the study period - 4366. Number of teenage pregnant women (15-19 yrs) - 662 (15%). It was observed that 70% of women belonged to rural areas. 50% of the women studied upto 8<sup>th</sup> standard. 74.27% (462) of them belonged to lower socioeconomic

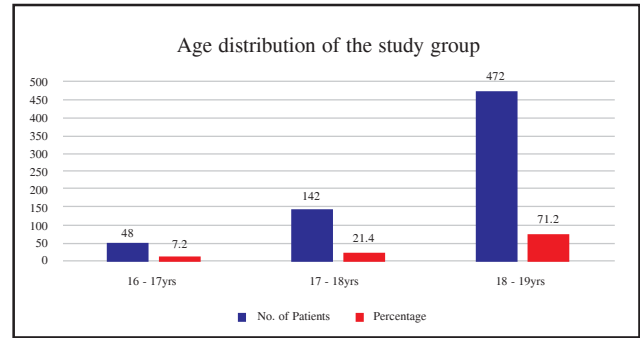
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class. 20.25%(126) of them belonged to middle socioeconomic class. 7.07% (44) of them belonged to upper socioeconomic class. In the control group 65% (395) women belonged to middle class and rest 35% (205) belonged to lower and upper class.

In the present study the most common age group was 18-19 yrs (472 women- 71.2%), 21.4% (142) of them belonged to 17-18yrs and 7.2% (48) of them were in the age group 16-17 yrs.

Table 1: Age distribution of the study population

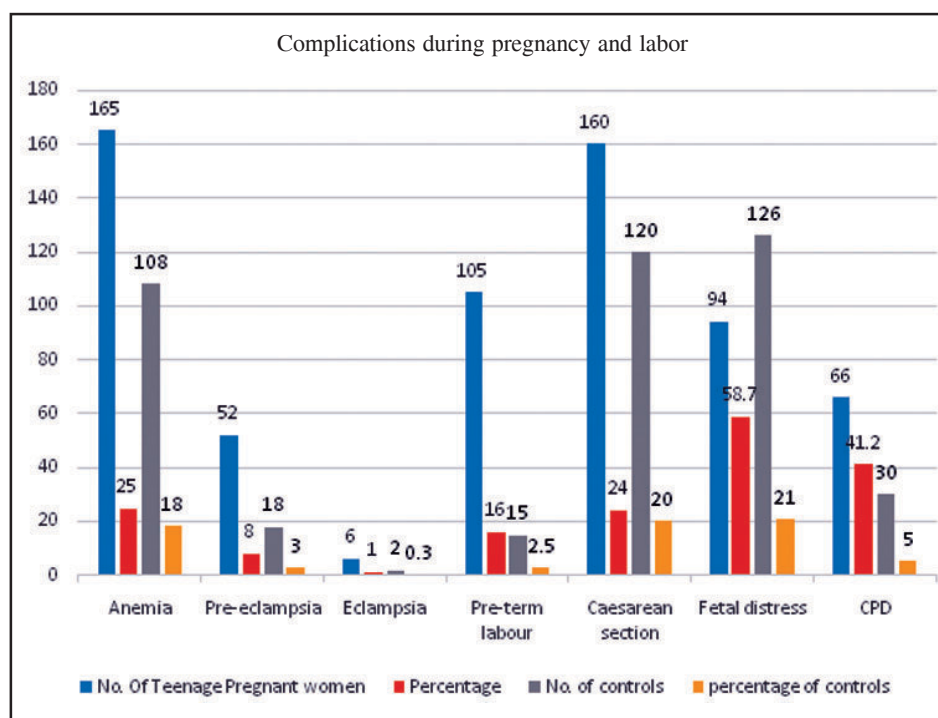
Age	No. of patients	Percentage
16 – 17 yrs	48	7.2%
17 – 18 yrs	142	21.4%
18 – 19 yrs	472	71.2%



The most common maternal complication seen in teenage pregnancies was anaemia seen in 165 women (25%), followed by increased incidence of caesarean section in 160 women (24%). Incidence of preterm labour 16%, preeclampsia 8%, eclampsia 1%. These complications were higher in teenage group when compared to the control group. The difference was found to be statistically significant for all complications except eclampsia

Table 2: Complications during pregnancy and labour

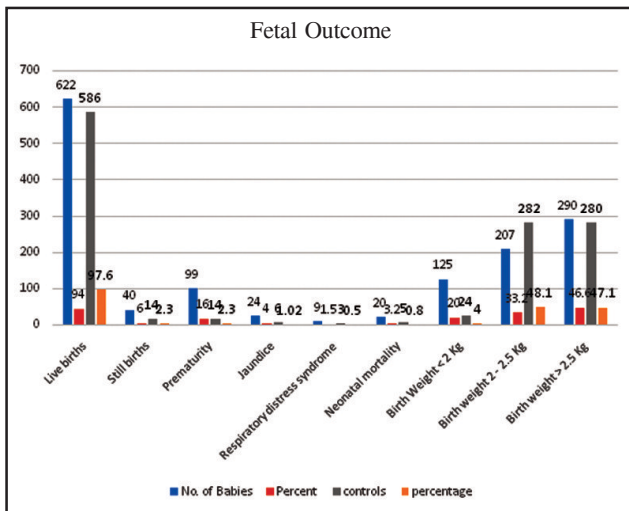
Complications	Study group No (n=662)	Study group %	Control group No (n=600)	Control group %	OR	95% C.I	X2	d f	P value
Anaemia	165	25%	108	18%	1.51	1.14- 2.01	8.9	1	0.002
Preeclampsia	52	8%	18	3%	2.76	1.55-4.95	14.6	1	0.0002
Ecclampsia	6	1%	2	0.3%	2.73	0.5-19.6	0.86	1	0.354
Preterm Labour	105	16%	15	2.5%	7.35	4.12-13.32	65.3	1	0.001
Caesarean section	160	24%	108	20%	1.45	1.09-1.93	7.16	1	0.007
Fetal distress	94	58.7%	126	21%	0.62	0.46-0.84	10.11	1	0.001
Cephalo pelvic disproportion	66	41.2%	30	5%	2.11	1.32-3.38	11.16	1	0.0008



In the study group total no of live births were 622. Birth weight less than 2kgs was seen in 20%, more than 2.5kgs in 46.6%. Prematurity was seen in 16%, jaundice in 4%, respiratory distress in 1.5%, neonatal mortality in 3.2%. It is seen that fetal complications are higher in the study group compared to the control group, p value being significant except for respiratory distress syndrome

Table : 3 Fetal outcome

Fetal outcome	Study group no (n=662)	Study group %	Control Group No(n=600)	Control Group %	OR	95% C.I	X <sup>2</sup>	df	p
Live births	622	94%	586	97.6%	0.37	0.19-0.71	10.57	1	0.001
Still births	40	6%	14	2.3%	2.69	1.4-5.25	10.57	1	0.001
Prematurity	99	16%	14	2.3%	7.36	4.05-13.62	61.5	1	0.001
Jaundice	24	4%	6	1.02%	3.72	1.43-10.23	9.35	1	0.0022
Respiratory distress syndrome	9	1.5%	3	0.51%	2.74	0.68-12.81	2.47	1	0.116
Neonatal mortality	20	3.2%	5	0.8%	3.71	1.31-11.34	7.76	1	0.009
Birthweights <2 kgs	125	20%	24	4%			79.14	2	0.001
2-2.5 kgs	207	33.2%	282	48.1%					
>2.5 kgs	290	46.6%	280	47.1%					



## Discussion

This study demonstrated that the teenage pregnant women face higher rate of complications during pregnancy and labour. The incidence of teenage pregnancy in our study was 15% and in that of Nahathai et al was 9%. Incidence of anemia in our study was 25% and in that of Nahathai et al was 17.1%. Incidence of preterm labour in our study was 16% and in Nahathai et al was 20.1% and in study by Prianka et al was 27.7%. Incidence of caesarean section in our study was 24% and in Nahathai et al was 17.1%. The incidence of still birth in our study was 6% and it was 5.1% in Prianka et al. Similar incidences were observed in the studies done by Eure et al, Hedinger et al, Suebnukain et al, Khunauihkul et al.

S.No.	Results	Present study	Nahathai et al study
1	Incidence of teenage pregnancy	15%	9%
2	Anemia	25%	17.1%
3	Preterm labour	16%	20.1%
4	Caesarean section	24%	17.1%

S.No.	Results	Present study	Prianka et al study
1	Preterm labour	16%	27.7%
2	Stillbirth	6%	5.1%

As pelvic architecture is not fully developed in the teenage pregnant women, CPD is an important indication for caesarean section. Hence teenage pregnancy is a high risk endangering the life of the women and the newborn<sup>2</sup>.

As it has impact on the society, teenage pregnancy should be avoided by delaying age of marriage<sup>4</sup>, educating the women, promoting contraception and creating awareness about various complications of teenage pregnancy among the general public. Health of adolescent women should be improved by treating anemia, infections such as malaria, hookworm and advocating nutritious diet.

## Conclusion

Incidence of teenage pregnancy in our study is 15%. Rate of maternal and fetal complications such as anemia, preeclampsia, eclampsia, preterm birth, low birth weight, perinatal mortality<sup>9</sup> are high. Hence a teenage pregnant women should be closely monitored during her pregnancy and labour and adequate neonatal care should be provided.

Conflict of Interest :

The authors note that there is no conflict of interest.

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