

Study of Maternal and Fetal Outcome in Teenage Pregnancy

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Abstract: Background: Pregnancy in a girl of 11-19 years when her first baby is born is defined as teenage pregnancy by WHO. Teenage pregnancy is considered as high risk due to increased maternal and foetal complications. Aims & Objectives: To determine the maternal and foetal outcome in teenage primigravidae. Methodology: Teenage primigravidae of any age attending the antenatal OPD of a teaching hospital are included in the study. Women with medical complications are excluded from study. Results: At least half of teenage primies were uneducated, unbooked, anaemic, and about 20% delivered preterm. Caesarean section rate, low birth weight babies and NICU admission were higher than a control group of primies of 20 years and above. Discussion: Irregular antenatal check-ups, late booking/nonbooking at hospital, high incidence of anaemia, preeclampsia, preterm labour, Increased caesarean section rate, low birth weight babies, NICU admissions were more in teenage primigravidae and these studies were related with Indian studies. Conclusion: There is a need to avoid early marriage and delay the first pregnancy in order to avoid the maternal and foetal complications of teenage pregnancy.

Keywords: teenage primi, anaemia, preeclampsia, preterm, preeclampsia

1. Introduction

WHO defines teenage pregnancy as any pregnancy in a girl who is 11-19 years of age, the age being defined as her age at the time the baby is born¹. Teenage pregnancies continue to be high in rural population and in low and middle income groups than in urban population. Of the 16.4 million married adolescent pregnancies across the world, 4 million are in India alone. Teenage pregnancies account for almost 16% of the total pregnancies in India. Teenage pregnancies account for almost 9% of total maternal deaths². In India the teenage pregnancy rate is highest in West Bengal (18.3%) followed by Assam (13.6%), Bihar (12.2%) and Jharkand (12%). Lowest in Chandigarh (2.1%) followed by Punjab (2.6%) and Himachal Pradesh (2.6%)³. In Andhra Pradesh it is 11.8%, highest in Vijaya nagaram district (17.8) followed by Prakasam (17.1%) and Chittoor (14.7%)⁴. Teenage pregnancy is considered high risk due to increased incidence of various Complications like preterm labour, anaemia, hypertensive diseases, abortions, STI s, HIV, malaria, Obstetric fistulas, puerperal sepsis, mental illness and high rate of caesarean sections for cephalopelvic disproportion⁵. Adverse foetal outcomes include preterm labour, low birth weight infants, still births, birth asphyxia, respiratory distress syndrome and birth trauma. There is a need to study the effects of maternal age on obstetric outcome to reduce the maternal and perinatal morbidity and mortality^{5,6}.

2. Aims & Objectives

To determine the maternal and foetal outcome in teenage primigravidae (11-19 years)

3. Material and Methods

It is a hospital based prospective observational study done in Government Maternity Hospital, Tirupati from September 2017 to August 2018. All teenage primigravidae without any

medical disorders were included in the study after taking informed consent to participate in the study. Teenage multigravidae, those not willing to participate in study, those with medical disorders were excluded from study.

Data was collected in a standardized proforma from teenage pregnant women of any gestational age attending the outpatient department and labour ward of Government maternity hospital, Tirupati. The socioeconomic status, education, religion, age at menarche, marital status, number of antenatal visits, general and physical examination and obstetric examination findings were recorded in the proforma. Investigations such as haemoglobin, urine analysis, VDRL test, HIV, HbsAg, Blood grouping and Rh typing were done and entered in proforma. All cases were followed up during antenatal, intranatal and postnatal period.

Maternal outcome

- 1) Obstetrical complications – anaemia, abortions, preterm labour, hypertensive disorders, PROM, IUGR, IUFD, ante-partum haemorrhage, oligohydromnios, malpresentation and multiple pregnancies were analyzed.
- 2) Mode of delivery – caesarean section rates, instrumental delivery rates and normal vaginal delivery rates were analyzed.
- 3) Postpartum complications – like PPH, puerperal pyrexia and lactational failure rates were analyzed.

Foetal outcome

- 1) Incidence of live births, low birth weight, still birth rate.
- 2) NICU admission rates were analyzed. Mother and child were followed up for 6 weeks. Observed results are compared with control group comprising primigravidae of ≥ 20 years

4. Results

A total of 320 pregnant teenage girls were studied in a period of one year

Table 1: Age Distribution of Teenage Group

Age in Years	Number	Percentage
14	4	1.25%
15	21	6.56%
16	49	15.32%
17	56	17.5%
18	84	26.25%
19	106	33.12%
Total	320	100%

More than half of the teenage pregnant women were in the age group of 18-19 years

Table 2: Comparison of Educational Status of Study Group and Control Group

Educational Status	Study Group (Teenage)		Control Group (20 Years And Above)	
	Number	Percentage	Number	Percentage
Illiterate	64	20%	21	6.56%
I-V Class	131	40.93%	127	39.69%
VI-X Class	83	35.94%	98	30.62%
XI-XII	42	13.13%	74	23.13%
Total	320	100%	320	100%

Majority of the women in teenage group have received primary education and 20% of teenagers were Illiterate. Literacy rates are significantly greater in control group ($p < 0.05$)

Table 3: Booking Status of Teenage Group

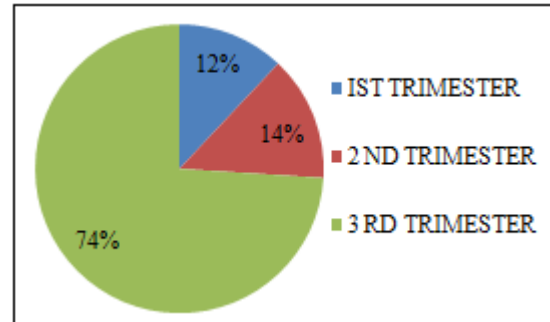
Booking Status	Teenage Group		Control Group	
	No	Percentage	No	Percentage
Booked	205	64.06%	252	78.75%
Unbooked	115	35.94%	68	21.25%
Total	320	100%	320	100%

36% of women in teenage group and 21.25% of women in control group were un booked and the difference is statistically significant ($p < 0.05$)

Table 4: Immunisation Status of Teenage Group

	Percentage
Immunized	99.37%
Notimmunized	0.63%

Almost all patients had received TT from health care workers even though they did not have regular antenatal checkups.



Graph 1: First Antenatal Visit of Teenage Group

Majority in the teenage group came for first check up in the second trimester

Table 5: Anemia in Teenage Pregnancy

Hemoglobin	Anaemia	Teenage Group		Control Group	
$\geq 11\text{g\%}$	No anaemia	18	5.63%	68	21.25%
10.0 - 10.9 g%	Mild	72	22.5%	12	40.31%
7.0 - 9.9 g%	Moderate	179	55.94%	98	30.62%
4.0 - 6.9 g%	Severe	45	14.06%	25	7.82%
$< 4\text{g\%}$	Very severe	6	1.87%	0	0
Total		320	100%	320	100%

Incidence of hypertension during pregnancy was greater in teenage group, although the difference is statistically not significant ($p > 0.05$).

Preterm labour was significantly more in teenage group. Among other complications, during antenatal period, 6 patients in the teenage group had intrauterine foetal death. 12 patients had intrauterine growth retardation, 11.65% had PROM and 5% had foetal malpresentation.

Table 6: Complications During Labour

Complications	Teenage Group		Control Group	
	Number	Percentage	Number	Percentage
Cephalopelvic disproportion	48	15%	20	6.25%
Prolonged labour	21	6.5%	14	4.4%
Perineal tear	3	0.93%	3	0.93%
Postpartum haemorrhage	5	1.56%	6	1.87%

CPD and Prolonged labour were more common in teenage group

Table 7: Mode of Delivery

Mode of Delivery	Teenage Group		Control Group	
	Number	percentage	Number	percentage
Normal Delivery	188	61.87%	227	74.69%
LSCS	70	22.82%	56	18.75%
Ventouse	28	9.06%	11	3.75%
Outlet forceps	20	6.25%	9	2.81%
Total	306	100%	304	100%

Although LSCS rates and instrumental delivery rates were high in teenage study group, the difference is statistically not significant ($p > 0.05$). Incidence of low birth weight was significantly greater in teenage study group ($p < 0.1$)

5. Discussion

In the present study on teenage primigravidae the complications during antenatal, intra-natal period were compared with those of primigravidae of 20 years and above age. In the present study 6.56% patients were of 15 yrs age, 15.32% belong to 16 yrs, 17.5% were 17 years, 26.25% were 18 years and 33.12% were 19 years old. Other Indian studies^{6,7} showed a high incidence of early teenage pregnancy compared to present study. There is a declining trend of early Pregnancies and these studies were done in North India where the age at marriage is early compared to south India.

64.06% women in our study were booked cases and 35.94% were unbooked cases. When compared to control group unbooked cases are higher among teenage primigravidae. Another study by Indranil Dutta et al⁷ showed a higher incidence of unbooked cases (51.8%). Most of them had first visit to hospital only at the end of second trimester and half of them at the time of delivery. This was due to lack of knowledge about pregnancy and related complications. Unbooked cases are significantly more among teenage group compared to control group ($p < 0.05$). Only 12% of teenage mothers booked during their first trimester because most of them were unaware that they were pregnant during initial period. After booking further antenatal checkups were irregular among teenage group due to dependence on husband and other family members to go to health care facility.

Early booking and regular antenatal checkups go a long way in preventing complications. Most of the teenage group book late and had irregular antenatal visits. In other studies from Karnataka⁸ only 25% of teenage pregnant women visited the hospital for the first time in 1st trimester, 63% in 2nd trimester and the remaining 12% during 3rd trimester. These findings are similar to those in the present study. In the present study only 5.63% women had Haemoglobin more than 11%. mild anaemia was seen in 22%, whereas 53% of women had moderate anaemia, 14% severe anaemia and <4% very severe anaemia. Mean Haemoglobin level was significantly less in teenage group ($p < 0.01$) when compared to the control group.

Incidence of hypertensive disorders in the present study group was 19.06% and more than 50% of these had complications of hypertensive disorders. The incidence in present study is similar to that in other Indian studies⁹. Incidence of imminent eclampsia and eclampsia were more in teenage group because they did not seek medical treatment early.

Incidence of preterm delivery in the present study was 20%. The younger the girl, more is the incidence of preterm labour in all the studies.

The incidence of CPD in our present study was 15% among teenage group, in other studies, it ranged from 1.5 to 7% Bhalariao et al⁹. It was 1.5% and in Ghazia yasmin et al¹¹ it was 7.04%

Table 8: Incidence of other antenatal complications among various other studies

Complications	Indranil et al	Gazia yasmin et al	Present study
Abortions	-	-	4.37%
Malpresentations	3.35	9.8%	5%
APH	-	3.36%	0.94%
PROM	-	18.21%	11.56%
IUFD	0.2%	7.56%	1.87%
IUGR	1.4%	8.4%	7.5%
Multiple [pregnancy]	0.4%	-	1.25%
Oligohydromnios	2.4%	2.24%	4.68%

As in other studies in the present study also there is no significant increase in incidence of other antenatal complications.

Table 9: Mode of Delivery among Various Studies

Mode of delivery	A.KUMAR ET AL ¹¹	Indranil et al ⁷	Present study group	Control group
Vaginal delivery	65%	46.2%	61.87%	74.69%
Caesarian section	32.2%	48.3%	22.82%	18.75%
instrumental	2.7%	5.4%	15.11%	6.56%

Among teenage group who delivered by caesarean section most common indication is CPD (36.98%)

Table 10: Incidence of Caesarian Section among Various Studies

Indication	Indranil Dutta et al ⁷	Present study
CPD	45.4%	36.98%
Fetal Distress	29.45	21.915
Failed Induction	21.8%	19.2%
Breech	3.3%	21.91%

The most common foetal complication is low birth weight either due to prematurity or due to IUGR..27.5% of babies born to teenage primis were less than 2.5 kgs in present study, but it is slightly lower than other studies^{12,13}. Most of the studies including present one did not differentiate between preterm and IUGR as a cause for low birth weight.

Table 11: Incidence of Fetal Complications Among Various Studies

Complications	A.Kumar et al ¹¹	Indranil Dutta et al ⁷	Present study
Birth Asphyxia	11.7%	29.2%	4.68%
Neonatal Jaundice	5.7%	11.9%	9.68%
Sepsis	1.9%	2.4%	2.81%
Congenital Anomalies	0.5%	0	0.31%
NICU CARE	-	31.9%	35.9%

In the present study 12.19 % of babies born have expired within 6 weeks of delivery. On analyzing the causes for perinatal loss, prematurity, IUGR, birth asphyxia and sepsis were the most common causes. Incidence of malpresentation and malpositions was not significantly different when compared to control group. 6% in the present study had intra uterine foetal death. 1% had abruptio placenta. Perinatal mortality in the study group was 12.19%. main cause for perinatal loss was Prematurity. Incidence of neonatal sepsis was 2.81% in the study group.

6. Conclusion

Preterm labour, hypertensive disorders in pregnancy, PROM, anaemia had a higher incidence in teenage primigravidae when compared to older primigravidas. In developing countries like India due to lack of education beyond primary education level early age at marriage is common leading to continued high rates of teenage pregnancies. In view of high maternal and foetal complications it is advisable to strictly reinforce the legal age of marriage and to postpone first pregnancy to pregnancy above 20 years. It is the combined responsibility of medical professional, government and social workers, NGO organizations to work towards preventing early marriages by improving the educational status of girl child.

7. Limitations

As this is a teaching government hospital based study and most of the patients coming to the hospital belong to low income and middle income group it may not reflect the true situation in the society.

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