



A STUDY OF TEENAGE PREGNANCY ITS RISK FACTORS AND COMPLICATIONS AT THE TERTIARY CARE CENTER

Obstetrics & Gynaecology

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ABSTRACT

Background: Pregnancy in girls between 10 and 19 years is adolescent or teenage pregnancy. Teenage parenthood comes with dangers and realities that have been well-documented. **Material & Methods:** This observational study was conducted at Government Medical College, Akola- Maharashtra. 80 teenage mothers admitted to the ward from October 2019 to May 2021 were included after permission from the Institutional Ethics Committee, and consent from the patients & was evaluated regarding teenage pregnancy, its risk factors, and complications. SPSS version 2.0 was used for statistical analysis. **Results:** The majority of the patients 68.8% were in the age group of 18-19 years, the mean age of the patients was 17.75 ± 1.22 years. 26.2% of patients were booked, 73.8% had unbooked status. 58.8% had preterm delivery (≤ 37 weeks), and 41.2% had term delivery. The prevalence of anemia (<10 gm %) was 63.8%. 38.8% of patients were delivered through Lower Segment Caesarean Section (LSCS) and vaginal delivery was performed in 61.2%. 63.8% of patients had anemia while 21.2% and 13.7% of patients developed Pregnancy induced hypertension (PIH) and postpartum hemorrhage (PPH) respectively. 7.5% and 6.2% of patients had antepartum hemorrhage (APH) & intrauterine growth restriction (IUGR) respectively. It was observed that unbooked status, preterm delivery, anemia, PIH, IUGR, Low birth weight (LBW), and NICU admission were significant risk factors for teenage pregnancy. **Conclusion:** Teenage pregnancies are associated with adverse obstetric and perinatal outcomes. Maternal age is an important feature, as several obstetric and perinatal complications are more frequent in teenage mothers than in other age groups. Improving the general health and nutrition of the girl child, increasing the age of marriage and subsequent childbearing, and access to safe abortion services along with adequate antenatal care reduce the incidence of adverse pregnancy outcomes.

KEYWORDS

Unbooked, Anemia, LBW

INTRODUCTION:

Pregnancy in girls between 10 and 19 years is adolescent or teenage pregnancy. (1) In developing countries like India, early marriages and early pregnancy are the accepted cultural norms of our society. (2) In India, 23.3 % of women aged between 20 and 24 years were married by the age of 15 years (3) and 47.4% by the age of 18 years (4). 6.8 % of adolescents between 15 and 19 years have begun childbearing. (3)

In India, child marriage and early confinement are longstanding practices, and the crisis is made worse by illiteracy and poverty. Teenage parenthood comes with dangers and realities that have been well-documented; these effects start at childbirth and affect both the mother and the child for the rest of their lives.

Hence the present study was done at our tertiary care center to study teenage pregnancy, its associated sociodemographic factors, and its maternal and fetal outcomes.

MATERIALS & METHODS:

This was a hospital-based observational study conducted on 80 teenage mothers to evaluate teenage pregnancy, its risk factors, complications, and adverse outcomes. The study has been approved by the Institutional Ethics Committee (IEC 251/2019). After explaining the purpose of the study in the vernacular language, those who agreed and consented to take part in the study were included. The patient's identity and details were kept confidential.

Inclusion criteria:

- All admitted teenage mothers of age 10-19 yr who give consent for participation.
- All consenting patients' parents consent for participation.

Exclusion criteria:

- Mothers aged more than 19 years
- Non-consenting patients

Once the patients were enrolled for the study, a thorough history and physical examination were done as per proforma. Informed consent was taken in writing from patients and patients' parents. A proper detailed history was taken and a clinical examination was done.

The following risk factors of teenage pregnancy were evaluated:

- Socioeconomic status
- ANC care
- Gestational age
- Mode of delivery etc.

The maternal outcome was studied under the following heads:

- Anemia
- Premature rupture of membrane
- Pregnancy-induced hypertension and eclampsia
- Preterm labor etc

Fetal outcomes were studied under the following heads

- Low birth weight
- Preterm birth
- NICU admission
- Stillbirth
- Respiratory distress syndrome
- Meconium-stained amniotic fluid etc.

The cases were followed throughout the hospital stay. Complications during antepartum, intrapartum, and postpartum were observed and managed as per the standard protocols. Details regarding the mode of delivery and the birth weight of the baby were noted. Baby details were noted and babies who are admitted to the neonatal ward were followed up till they were discharged.

Statistical Analysis:

Quantitative data was presented with the help of Mean and Standard deviation. Comparison among the study group was done with the help of unpaired 't' test as per results of the normalcy test.

Qualitative data was presented with the help of frequency and percentage tables. Association among the study groups is assessed with the help of Fisher's test, Student 't' test, and Chi-square test. 'p'-value less than 0.05 is considered significant. The Chi-square statistic was used for testing relationships on categorical variables. Student t-test was used to compare the means of a normally distributed interval-dependent variable for two independent groups. Fisher's exact test was used when we wanted to conduct a Chi-square test, but one or more of the cells had an expected frequency of five or less. Appropriate statistical software, including but not restricted to MS Excel was used. SPSS version 2.0 was used for statistical analysis.

OBSERVATIONS AND RESULTS:

This study was conducted from October 2019 to May 2021 - during the peak COVID pandemic (both first and second wave) thus being a dedicated COVID facility only those cases which were beyond the period of 20 weeks of gestation were referred to the facility for safe confinement. Thus, in the present study we only report cases that were either preterm or term. Medical terminations of pregnancy in teenage cases were managed at another tertiary center. In the pandemic routine, healthcare services were largely compromised which directly or indirectly affected the study results.

In the present study, 68.8% were in the age group of 18-19 years, mean age of the study population was 17.75 ± 1.22 years. 36.2% were from the lower-socio economic class. 73.8 % were unbooked patients. 58.8% of patients had preterm delivery (≤ 37 weeks) while 41.2% of patients had term delivery. Majority (51.2%) of patients were having Hb in the range of 9-9.9 gm%. 36.2% of patients had haemoglobin levels in the range of ≥ 10 gm%. The prevalence of anaemia (<10 gm %) was 63.8%. (Table-1)

Table 1: Distribution of patients according to Hemoglobin levels

Hemoglobin levels (gm %)	Number	Percentage (%)
7-7.9 gm%	1	1.2%
8-8.9 gm%	9	11.4%
9-9.9 gm%	41	51.2%
≥ 10 gm%	29	36.2%
Total	80	100%

38.8% of patients were delivered through Lower Segment Caesarean Section (LSCS) and vaginal delivery was performed in 61.2%. 63.8% of patients had anemia while 21.2% and 13.7% of patients developed Pregnancy-induced hypertension (PIH) and Postpartum hemorrhage (PPH) respectively. 7.5% and 6.2% of patients had Antepartum hemorrhage (APH) and Intrauterine growth restriction (IUGR) respectively. (Figure-1) The mean birth weight of neonates was 2.36 ± 0.32 kg. 65% of neonates had low birth weight (<2.5 kg). (Table-2) 21.2% of neonates were admitted to NICU while 6.2% and 3.7% neonates developed Meconium-stained amniotic fluid (MSAF) and respiratory distress syndrome (RDS) respectively. 65.3% of neonates were alive and healthy. (Table-3)

Maternal Complications

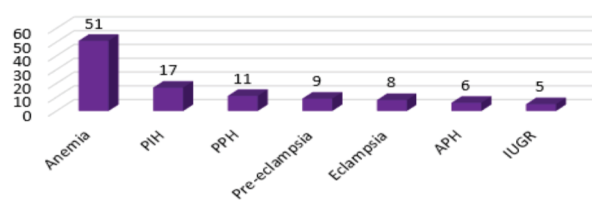


Figure: 1- Distribution of patients according to Maternal Complications

PIH-Pregnancy Induced Hypertension, PPH- Postpartum Haemorrhage, APH- Antepartum Haemorrhage, IUGR- Intrauterine Growth Restriction

Table 2: Distribution of neonates according to Birth Weight

Birth Weight (in kg)	Number	Percentage(%)
<1.5 kg	9	11.2%
1.51 – 2.5 kg	43	53.8%
2.51 – 3.5 kg	28	35%
Total	80	100%
Mean $\pm$ SD (in Kg)	2.36 ± 0.32 kg	

Table 3: Distribution of neonates according to Neonatal Outcome

Neonatal Outcome	Number	Percentage (%)
NICU Admission	17	21.2%
MSAF	5	6.2%
RDS	3	3.7%
Still Birth	2	2.4%
Neonatal Death	1	1.2%
Alive and Healthy	52	65.3%
Total	80	100%

NICU: Neonatal Intensive Care Unit, MSAF - Meconium-stained amniotic fluid, RDS – Respiratory distress syndrome

DISCUSSION:

In the present study, the majority of the patients (68.8%) were in the age group of 18-19 years followed by 28.7% in the age group of 16-17 years and 2.5% in the age group of 10-15 years. The mean age of the patients was 17.75 ± 1.22 years. This is similar to the studies of Asrat et al (5) and Rudra S et al (6). In our study, the majority of patients were from the lower class (36.2%) followed by the lower middle class (21.1%), upper lower class (18.9%), upper-middle class (13.8%), and upper class (10%).

26.2% of patients were booked while 73.8% of patients had unbooked status. Due to the nationwide lockdown and fear of getting COVID infection during the health facility visit apart from the social taboo with teenage pregnancy, the registration and ANC visits were affected largely. Early detection of teenage pregnancies has also been affected due to the prevalent pandemic (7–10). These findings were comparable to the study findings of Egbe et al (11) and Al-Bassam AN (12).

58.8% of patients had preterm delivery (≤ 37 weeks) while 41.2% of patients had term delivery. The haemoglobin level in 1 (1.2%) patient was in the range of 7-7.9 gm% while the haemoglobin levels in 9 (11.4%) and 41 (41%) patients were in the range of 8-8.9 gm% and 9-9.9 gm% respectively. 41 (51.2%) patients had haemoglobin levels in the range of ≥ 10 gm%. The prevalence of anaemia (<10 gm %) was 63.8%. (Table-1) The delivery route was Lower Segment Caesarean Section (LSCS) in 31 (38.8%) patients and Vaginal was performed in 49 (61.2%) patients. Asrat et al (5), Rudra S et al (6), and Indarti J et al (13) noted similar observations in their studies.

In the present study, 51 (63.8%) patients had anemia while 17 (21.2%) and 11 (13.7%) patients developed Pregnancy-induced hypertension (PIH) and Postpartum hemorrhage (PPH) respectively. 9 (11.2%) and 8 (10%) patients had pre-eclampsia and eclampsia respectively. 6 (7.5%) and 5 (6.2%) patients had Antepartum hemorrhage (APH) and Intrauterine growth restriction (IUGR) respectively. (Table-2)

Brindis CD (14) study revealed an increased incidence of pre-eclampsia and gestational hypertension in adolescent pregnancies compared to the older gravidas, especially those less than 16 years. Khaniya Bet al (15) hospital-based retrospective case-control study reported hypertensive disorders was 5.71% and 1.42% ($p=0.05$) in the teenage and adult group. The proportion of babies with intrauterine growth restriction was 5.71% in teenagers and 1.42% in the adult group.

Indarti J et al (13) conducted retrospective study evaluating the obstetric and perinatal outcomes of teenage pregnancy found higher prevalence of eclampsia, preterm delivery, anemia at labor, postpartum hemorrhage, and low birth weight among teenagers.

9 (11.2%) neonates weighed <1.5 kg while 43 (53.8%) and 28 (35%) neonates weighed between 1.51-2.5 kg and 2.51-3.5 kg respectively. The mean birth weight of neonates was 2.36 ± 0.32 kg. 52 (65%) neonates had low birth weight (<2.5 kg). This is concordant with the studies of Asrat et al (5) and Rudra et al (6). It was observed in the present study that the mean Apgar score at 1 min and 5 minutes was 6.14 ± 0.95 and 7.74 ± 0.82 respectively. There was a significant improvement in Apgar score as per the Student t-test ($p<0.05$). 17 (21.2%) neonates were admitted to NICU while 5 (6.2%) and 3 (3.7%) neonates developed Meconium-stained amniotic fluid (MSAF) and respiratory distress syndrome (RDS) respectively. 2 (2.4%) neonates were stillborn while there was 1 (1.2%) neonatal death. 52 (65.3%) neonates were alive and healthy. (Table-3) These findings were similar to findings in the studies of Rudra et al (6), Paller L et al (16) and Khaniya B (15).

It was observed in our study that unbooked status, preterm delivery, anemia, PIH, IUGR, LBW, and NICU Admission were significant risk factors for teenage pregnancy. (Table-4) Similar observations were noted in the studies of Asrat et al (5), Rudra et al (6), Paller L et al (16), La-Orpipat T et al (17) and Verma V et al (18).

Table 4: Association of Factors with Teenage Pregnancy

Parameters	Odds ratio (OR)	95% Confidence Interval (CI)	p-Value
a) Socio-economic Status	1.10	0.99–1.22	p>0.05
b) Booking Status			
Booked	1.01	0.83–1.54	p>0.05
Unbooked	1.70	1.15–2.50	p<0.05
c) Gestational Age			
Preterm (<37 weeks)	1.42	1.26–1.60	p<0.05
Term (38-42 weeks)	1.39	0.85–2.31	p>0.05
d) Mode of Delivery			
LSCS	0.82	0.61–1.11	p>0.05
Induction	0.81	0.61–1.09	p>0.05
Spontaneous	1.12	0.88-1.36	p>0.05
Instrumental	0.96	0.84-1.32	p>0.05
e) Maternal Complications			
Anemia	1.12	1.01–1.25	p<0.05
PIH	2.70	2.33–3.13	p<0.05
PPH	0.75	0.54–1.03	p>0.05
Pre-eclampsia	0.97	0.82–1.16	p>0.05
Eclampsia	1.13	0.54-1.66	p>0.05
APH	1.04	0.87–1.52	p>0.05
IUGR	1.50	1.28–1.75	p<0.05
f) Birth Weight (kg)			
<1.5 kg	2.61	2.14–3.07	p<0.05
1.51 – 2.5 kg	1.59	1.40–1.95	p<0.05
2.51 – 3.5 kg	1.81	0.31 – 2.39	p>0.05
g) APGAR Score			
1 minute	0.80	0.59–1.09	p>0.05
5 minutes	1.06	0.77-1.24	p>0.05
h) Neonatal Outcome			
NICU Admission	1.61	1.43–1.83	p<0.05
MSAF	1.09	0.81 – 1.47	p>0.05
RDS	0.91	0.72–1.32	p>0.05
Still Birth	1.41	0.43 – 4.55	p>0.05
Neonatal Death	0.94	0.31 - 2.98	p>0.05
Alive and Healthy	1.17	0.45 – 2.85	p>0.05

LSCS- Lower Segment Caesarean Section, PIH- Pregnancy Induced Hypertension, PPH- Postpartum Haemorrhage, APH- Antepartum Haemorrhage, IUGR- Intrauterine Growth Restriction, NICU: Neonatal Intensive Care Unit, MSAF - Meconium-stained amniotic fluid, RDS – Respiratory distress syndrome

CONCLUSION:

Teenage pregnancies are associated with adverse obstetric and perinatal outcomes. Maternal age is an important feature, as several obstetric and perinatal complications are more frequent in teenage mothers than in other age groups. Improving the general health and nutrition of the girl child, increasing the age of marriage and subsequent childbearing, and access to safe abortion services along with adequate antenatal care reduce the incidence of adverse pregnancy outcomes.

Declarations:

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Abbreviations-

NICU: Neonatal Intensive Care Unit
LSCS: Lower Segment Caesarean Section
PIH: Pregnancy Induced Hypertension
IUGR: Intrauterine Growth Restriction
ANC: Antenatal Care
RDS: Respiratory distress Syndrome
MSAF: Meconium Stained Amniotic Fluid
APH: Antepartum Hemorrhage
PPH: Postpartum Hemorrhage
Min: Minute
Kg: Kilogram
LBW: Low birth weight
COVID: Corona Virus Disease

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