



TEENAGE PREGNANCY: MATERNAL AND FETAL OUTCOME IN A TERTIARY CARE CENTRE

Obstetrics & Gynaecology

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ABSTRACT

Background ;Teenage pregnancy remains a public health problem as about 70,000 adolescent mothers die every year due to early childbearing. Teenage pregnancies have shown association with higher risks of prematurity, low birth weight, preeclampsia and anaemia as compared to adult pregnancies. **Aim** -To study the maternal and foetal outcomes of teenage pregnancies. **Methodology**- Hospital based retrospective observational study in tertiary care centre during period of 1st January to 31st December 2023. **Result**- Total number of teenaged gravidas admitted in labour room for delivery or MTP during one year study period was 350. Out of these 336(96%) delivered and 14(4%) underwent MTP. Majority 336(96%) were in 17-19 years age group followed by 12 (3.42%) in 14-16 years and 2(0.57%) were less than equal to 13 years. Amongst these 329(94%) were married and 21(6%) were unmarried. Women whose age at conception was < 18 years 21(6%) were notified under POCSO act. Majority 254 (72.60%) were primigravida and 96(27.40%) were multigravida. Out of total 336 deliveries 224(66.66%) were term and 112(33.33%) were preterm. Maternal complications noted in order of frequency were Pre eclampsia 34 (10.11%), Severe Anaemia (Hb < 7 g/dl)- 20 (5.95%), CPD – 16 (4.76%), Antepartum haemorrhage – 14 (4.16%), Eclampsia 12 (3.57%) and Obstructed labour 11 (3.27%). Fetal complications observed in the order of frequency were: Oligohydroamnios 35 (10.41%), Breech presentation 10 (2.97%), Fetal distress and SLOC/DLOC- 6 (1.76%) each. There were 186(53.14%) vaginal deliveries and 150(42.86%) Cesarean deliveries. Common indication were- Oligohydroamnios with PROM/PPROM/failed induction 35 (23.33%), fetal distress 30(20%), Pre eclampsia 24(16%), CPD 16(10.66%), obstructed labour 11(7.33%). 20 (5.71%) teenaged mothers needed ICU care and there were 3(0.85%) maternal deaths. **Conclusion**- Teenage pregnancy is associated with maternal and perinatal complications due to lack of physical, nutritional and developmental maturity of the teenage mothers. Maternal complications like Pre eclampsia, severe anaemia, cephalo-pelvic disproportion(CPD), obstructed labour and Perinatal complications like prematurity, LBW and stillbirths can be prevented if early child bearing is avoided by premarital, pre conceptional counselling. The POCSO act has helped teenage victims to get care and institutional services.

KEYWORDS

Teenage pregnancy, High risk pregnancy, unintended pregnancies, maternal mortality.

INTRODUCTION

Teenage pregnancy is defined as pregnancy occurring during the maternal ages of 13-19 completed years at delivery. Worldwide, according to the World Health Organisation about 16 million women aged 15-19 years give birth to children every year, accounting for 11% of births. It remains a public health problem as about 70,000 adolescent mothers die every year due to early childbearing [1]. The prevalence varies widely in different countries. In India, it was 83/1000 population in the years 2005-2010 [2]. Teenage pregnancies in developed countries are outside of marriage and are usually due to adolescent sexual habits. In developing nations, as in India, they are due to the early age of marriage and tend to be welcomed by family members and society [3]. Despite the legal age for marriage of girls being eighteen, 6.8% of women in India were child brides, a higher proportion of them being in rural areas (NHFS-5 2019-2020) [4]. During adolescence, the body is in a growing stage. If pregnancy occurs during these years nutrition must suffice the growth of the mother in addition to the baby. The outcomes are influenced by this biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition and stress [5]. Studies show maternal and fetal mortality and morbidity is directly related to the age of the mother [6]. The outcomes are more adverse in the lower teenage group of 13-15 years than the higher teenage group of 16-19 years. Teenage pregnancies have shown association with higher risks of prematurity, low birth weight, preeclampsia and anaemia as compared to adult pregnancies [6,7,8]. Long term follow up studies have shown that the children born to teenage mothers are at higher risk and are usually plagued by intellectual, language, and socio-emotional delays [9]. Some studies, however have shown that adverse outcomes of teenage pregnancies are the result of socioeconomic factors rather than the biological age itself. These factors may cause a delay in seeking health care by the mother [10]. This other risk factor, like non-utilization or non accessibility to antenatal care may be more of a contributing factor rather than the young age of the mother [11,12,13]. Sufficient and even higher level of antenatal care can promote good outcomes of teenage pregnancies [14].

Besides maternal and fetal outcome of teenage pregnancy, Child Sexual Abuse is an alarming reality and is being increasingly reported

in India as well as globally. Pediatricians and allied medical professionals are often the first point of contact with abused children and their families. India has adopted the Protection of Children from Sexual Offences Act (POCSO) in 2012. It is a comprehensive law on sexual abuse, which expands the scope and range of forms of sexual offences, makes reporting of abuse mandatory and defines guidelines for the examination of victims [15]. Reporting of the offence under POCSO act is mandatory and punishable with imprisonment of up to 6 months and/or with fine [16].

An obstetrician is very often called upon to examine teenage girls who are victims of sexual offences and also to provide antenatal care, abortion services (MTP) and conduct delivery of these high risk pregnancies. Compulsory reporting of any pregnancy conceived before 18 years age of the girl is an effort of the government to prevent sexual abuse of children, indirectly to reduce teenage pregnancies and also provide them appropriate health care.

Despite controlling all other risk factors for high risk pregnancies, a few studies have shown a consistent association of teenage childbearing with adverse obstetric outcomes. It remains unclear whether age or socioeconomic factors are more contributing to the outcomes of teenage pregnancies. This study aims to study the maternal & perinatal outcome of teenage pregnancies.

Aims And Objectives

- 1) To evaluate the demographic profile, complications and maternal outcome of teenaged gravidas.
- 2) To evaluate the perinatal outcome at delivery (retrospective study)

MATERIAL & METHODS

A hospital based retrospective observational study was carried out in the Obstetrics and Gynaecology department of J K LON Hospital, Government Medical College, Kota, Rajasthan over a period of twelve months from 1st January 2023 to 31st December 2023.

A total of 350 teenage mothers who were admitted in JK ION Hospital were studied. Teenage mothers aged 13-19 completed years at

abortion/ delivery were regarded as the cases. Research was carried out after approval from the institutional ethics committee. The necessary data was collected from the parturition, abortion & MTP registers.

Data was analysed using MS Excel Sheet and relevant statistical tests were applied. Definitions as per standard textbook Williams Obstetrics, Arias' & DC Dutta have been used to identify the following in present study

1. Preterm delivery- It is defined as birth between the age of fetal viability and 37 completed weeks of gestation.
2. Term delivery- It is defined as birth after 37 completed weeks of gestation.
3. Pre eclampsia- Pre-eclampsia is a disorder of pregnancy associated with new onset hypertension, which occurs most often after 20 weeks gestation & frequently near term, often accompanied by new onset proteinuria, hypertension and other signs or symptoms of pre eclampsia may present in some women in the absence of proteinuria. Hypertension is associated with proteinuria greater than 0.3 g/L in a 24-hour urine collection, dipstick reading of 2+ by qualitative urine examination or protein creatinine ratio of 0.3 mg/dL or more after 20 weeks gestation.
4. Eclampsia- Convulsion occurring in a patient with pre-eclampsia are known as eclampsia.
5. Antepartum haemorrhage (APH)- It is defined as bleeding from the genital tract in the second half of pregnancy.
6. Cephalopelvic disproportion (CPD) may be absolute (poor pelvic dimensions despite well flexed and left occipitoanterior (LOA) position with maximal moulding) or relative due to failure of flexion, rotation or moulding or synclitism and is diagnosed after a well-conducted trial of labour.
7. Obstructed labour is the one where, in spite of good uterine contractions, the progressive descent of the presenting part is arrested due to mechanical obstruction. This may result either due to factors in the fetus or in the birth canal or both, so that further progress is almost impossible without assistance.
8. Oligohydramnios- condition where the liquor amnii is deficient in amount to the extent of less than 200ml at term. Sonographically, it is defined when the maximum vertical pocket of liquor is less than <2cm or when amniotic fluid index (AFI) is less than 5cm (less than 5 percentile).
9. Prelabour Rupture of the membranes (PROM)- Spontaneous rupture of the membrane any time beyond 28th week of pregnancy but before the onset of labour is called prelabour rupture of the membranes. When it occurs before 37 completed weeks, it is called Preterm Prelabour rupture of membranes (PPROM).
10. Anaemia- According to the standards laid down by WHO. Anaemia in pregnancy is present when the haemoglobin (Hb) concentration in the peripheral blood is 11g/100ml or less (or the haematocrit < 32%). Mild anaemia - Hb between 9.0-10.9g%, Moderate anaemia- 7.0-8.9g%, Severe Anaemia- less than 7g%.
11. Low birth weight (LBW) infant - It is defined as the one whose birth weight is less than 2500g irrespective of the gestational age.
12. Very low birth weight (VLBW) infant- It is defined as the one whose birth weight is 1500g or less.
13. Extremely low birth weight (ELBW)- infants with weight 1000g or less.
14. APGAR Score- A scoring procedure for better Long term neurological correlation obtained at the 5 minute of birth. It includes 5 parameters respiratory rate, heart rate, muscle tone, reflex irritability and colour. Total score is 10.

RESULTS

Table No. 1: Distribution According To Maternal Age

AGE GROUP	NUMBER OF TEENAGE MOTHERS	PERCENTAGE
17-19 years	336	96.00%
14-16 years	12	3.42%
<= 13 years	2	0.57%
TOTAL	350	99.99%

In present study, 336(96%) females belong to age group 17-19 years, 12(3.42%) females belong to age group 14-16 years and 2(0.57%) females were <= 13 years. Out of 336 females in age group 17-19 years, 7(2.0%) females were less than 18 years and 329(94.00%) females were more than equal to 18 years.

21 (6%) teenage pregnancies were notified under POCSO Act because

they were less than 18 years at the time of conception. Out of which, 7 (2%) females delivered and 14 (4%) females underwent Medical Termination of Pregnancy (MTP).

Table No.2 : Distribution According To Parity

	NUMBER	PERCENTAGE
PRE TERM DELIVERIES	112	33.33%
TERM DELIVERIES	224	66.66%
TOTAL	336	99.99%

Among 350 teenage mothers 254 (72.60%) females were primigravida and 96 (27.40%) were multigravida.

Table No. 3: Time Of Delivery

PARITY	NUMBER OF TEENAGE MOTHERS	PERCENTAGE
PRIMIGRAVIDA	254	72.60%
MULTIGRAVIDA	96	27.40%
TOTAL	350	100%

Out of 336 women who delivered – 224 (66.66%) had term delivery and 112 (33.33%) had pre term delivery.

Table No. 4: Maternal And Fetal Complications

MATERNAL/FETAL COMPLICATION	NUMBER OF TEENAGE MOTHERS	PERCENTAGE n = 336
MATERNAL COMPLICATION		
PRE ECLAMPSIA	34	10.11%
SEVERE ANAEMIA (Hb < 7g/dl)	20	5.95%
CEPHALO PELVIC DISPROPORTION(CPD)	16	4.76%
ANTEPARTUM HEMORRHAGE	14	4.16%
ECLAMPSIA	12	3.57%
OBSTRUCTED LABOUR	11	3.27%
FETAL COMPLICATION		n = 336
OLIGOHYDROAMNIOS	35	10.41%
BREECH	10	2.97%
FETAL DISTRESS	6	1.78%
SLOC/ DLOC	6	1.78%

Maternal complications observed in order of frequency were: Pre eclampsia 34 (10.11%), Severe Anaemia (Hb < 7 g/dl)- 20 (5.95%), CPD – 16 (4.76%), Antepartum haemorrhage – 14 (4.16%), Eclampsia 12 (3.57%) and Obstructed labour 11 (3.27%).

Fetal complications observed in the order of frequency were: Oligohydramnios 35 (10.41%), Breech presentation 10 (2.97%), Fetal distress and SLOC/DLOC- 6 (1.76%) each.

Table No. 5: Indications Of Cesarean Section

INDICATION	NUMBER OF TEENAGE MOTHERS	PERCENTAGE n = 150
OLIGOHYDROAMNIOS WITH PROM/ PPROM/ FAILED INDUCTION	35	23.33%
FETAL DISTRESS	30	20.00%
PRE ECLAMPSIA	24	16.00%
CPD	16	10.66%
ECLAMPSIA	12	8.00%
OBSTRUCTED LABOUR	11	7.33%
SLOC/ DLOC	6	4.00%
BREECH	6	4.00%
PREVIOUS LSCS	6	4.00%

ANTEPARTUM HAEMORRHAGE(APH)	4	2.66%
TOTAL	150	99.98%

Out of the total 150 Caesarean sections - Oligohydroamnios (with PROM/ PPRM/ Failed induction) was found to be the most common indication i.e. 35(23.33%) followed by fetal distress – 30 (20%), Pre eclampsia – 24(16%), CPD – 16 (10.66%), Eclampsia- 12(8%), Obstructed labour- 11(7.33%), SLOCO/DLOC, Breech and Previous LSCS –6(4%) cases each and APH- 4(2.66%).

Table No. 6: Maternal Outcome

OUTCOME PARAMETERS	NUMBER OF TEENAGE MOTHERS	PERCENT AGE
GESTATIONAL AGE AT DELIVERY		
< 20 WEEKS	14	4.00%
20-37 WEEKS	112	32.00%
>37 WEEKS	224	64.00%
TOTAL	350	100%
MODE OF DELIVERY		
VAGINAL DELIVERY	186	53.14%
CESAREAN SECTION	150	42.86%
MTP	14	4.00%
TOTAL	350	100%
MATERNAL ICU ADMISSION	20	5.71%
MATERNAL DEATH	3	0.85%

Maternal outcome was studied under following parameters , first is the gestational age at the time of delivery in which 14 (4.00%) females had MTP before the period of gestation 20weeks. 112 (32.00%) females had preterm deliveries and 224 (64.00%) females had deliveries at term.

Among total 350 teenage mothers, 186 (53.14%) females had normal vaginal deliveries, 150(42.86%) females underwent caesarean section and 14(4.00) females underwent MTP.

21 (6.00%) females were notified under POCSO Act. Out of 21, 7(2%) females delivered (5 vaginal deliveries and 2 caesarean section) and 14 (4.00%) females underwent MTP (Medical Termination of Pregnancy).

Among these total teenage pregnancies 20 (5.71%) females required ICU admission. There were 3 maternal deaths (0.85%). Causes of maternal deaths were:

1. Amniotic fluid embolism.
2. Pulmonary Oedema
3. Cerebrovascular accident.

Table No. 7: Perinatal Outcome

OUTCOME PARAMETERS	NUMBER OF BABIES	PERCENT AGE
FETAL BIRTH WEIGHT		
BIRTH WEIGHT (>3000g)	39	11.60%
BIRTH WEIGHT (2500-3000g)	170	50.59%
LOW BIRTH WEIGHT (1500-2500g)	52	15.47%
VERY LOW BIRTH WEIGHT (1000-1500g)	45	13.39%
EXTREMELY LOW BIRTH WEIGHT (<1000g)	30	8.92%
TOTAL	336	99.97%

APGAR SCORE		
<7	115	34.22%
>7	221	65.77%
TOTAL	336	99.99%
NICU ADMISSION	142	42.26%
SHIFTED MOTHER SIDE	194	57.73%
TOTAL	336	99.99%
STILLBIRTHS	0	0

Among 336 deliveries, 39 (11.60%) babies were having birth weight >3000g. 170 (50.59%) babies were having birth weight between 2500-3000g. 52 (15.47%) babies had low birth weight that is weight between 1500-2500g. 45 (13.39%) babies were of very low birth weight that is between 1000-1500g. And 30(8.92%) babies had extremely low birth weight.

Out of 336 babies delivered, 115 (34.22%) babies had APGAR score < 7 and 221 (65.77%) babies had APGAR score > 7.

And total 142(42.26%) babies out of 336 total deliveries required NICU admission. There were no stillbirths. Neonatal deaths could not be assessed because the study is retrospective.

DISCUSSION

In present study majority 336(96%) were in age group 17-19 years, similar result was found in study by Snigdha K and Veni Avvaru K. , - in which majority of adolescent mothers were in age group 17-19 years(3,5) . In a study by Iham Usta, Deni zoorob et. al. ,it was found that 27% adolescents were less than 18 years(8).

In present study 329(94%) females were married and 21(6%) were unmarried. In a study by Ogunwale O. & Rangiah S , it was found that 0.5% were married and 99.5% were unmarried(10). The reason is still prevalent childhood marriages in India in comparison to possible prevalent early sexual practices in unmarried teenagers in the other african study.

In present study 254(72.60%) were primigravida and 96(27.40%) were multigravida. In a study conducted by Kumar A , Singh T et. al. , it was observed that 83.2% females were primigravida(6). And in a study conducted by Ogunwale O. & Rangiah S. , there were 92% primigravida & 7.9% were multigravida(10).

In present study out of total 336 deliveries, 224(66.66%) were term deliveries and 112(33.33%) were preterm deliveries. In a study by Ogunwale O. & Rangiah S. , it was found that 23.1% were preterm deliveries and 75.5% were term deliveries (10) and in a study by Iham Usta, Deni zoorob et. al , 11.1% were pre term deliveries(8). In a study conducted by Mukhopadhyay P , Chaudhuri N et. al. 27.7% deliveries were pre term deliveries(17). In a study by Kumar A. , Singh T. , et. al. , there were 51.8% pre term deliveries(6). Rates of preterm deliveries varies according to the social, nutritional, economic and educational status, quality of antenatal care received and associated complications like hypertensive disease, anaemia, antepartum haemorrhage etc.

In present study maternal complications noted in order of frequency were Pre eclampsia 34 (10.11%), Severe Anaemia (Hb < 7 g/dl)- 20 (5.95%), CPD – 16 (4.76%), Antepartum haemorrhage – 14 (4.16%), Eclampsia 12 (3.57%) and Obstructed labour 11 (3.27%). In a study conducted by Kumar A. , Singh T. , et. al. it was observed that complications like- Pre Eclampsia was found in 4.3% pregnancies and Eclampsia 4.9% (6). In a study by Ogunwale O. & Rangiah S. - Hypertensive disease was present in 39.8% teenage pregnancies, Eclampsia in 3.7% teenage pregnancies, PROM in 4.2% pregnancies and Anaemia in 39.8% teenage mothers(10). Fetal complications in present study in order of frequency were Oligohydroamnios 35 (10.41%), Breech presentation 10 (2.97%), Fetal distress and SLOC/DLOC- 6 (1.76%) each. In a study by Snigdha K. and Veni Avvaru K. , - fetal complications observed were - Breech in 4% cases , Fetal distress in 7% and Oligohydroamnios in 3% pregnancies(3).

There were 186(53.14%) vaginal deliveries and 150(42.86%) Caesarean deliveries. Similar results were found in a study conducted by Ogunwale O. & Rangiah S. , where 53.2% were vaginal deliveries

and 45.8% were Cesarean deliveries (10). In a study by Geist R. , Shashar D. , et. al. it was found that 72.7% teenage mothers had vaginal deliveries and 9% had Cesarean deliveries(12). In a study by Mukhopadhyay P. , Chaudhuri R. et. al it was found that there 65.7% normal vaginal deliveries and 28.3% were Caesarean deliveries(17).

In the present study common indication for Caesarean section were Oligohydroamnios (with PROM/ PPRM/ Failed induction) that is in 35(23.33%) , fetal distress – 30 (20%), Pre eclampsia – 24(16%), CPD – in prer16 (10.66%), Eclampsia- 12(8%), Obstructed labour- 11(7.33%), SLCO/DLOC, Breech, Previous LSCS – 6(4%) cases each and APH- 4(2.66%). When compared to the study done by Snigdha and Veni Avvaru K. - Oligohydroamnios / PROM was found in 17% females, fetal distress in 7% females , Pre eclampsia & Eclampsia 2% each , CPD in 6% females and Obstructed labour in 7% females(3).

In present study Among 336 deliveries, 39 (11.60%) babies were having birth weight >3000g. 170 (50.59%) babies were having birth weight between 2500-3000g. 52 (15.47%) babies had low birth weight that is weight between 1500-2500g. 45 (13.39%) babies were of very low birth weight that is between 1000-1500g. And 30(8.92%) babies had extremely low birth weight . In a study conducted by Ogunwale O. & Rangiah S. it was found that 0.9% babies had birth weight less than / equal to 1 kg, 24.5% babies had weight from 1.1-2.5kg and 74.6% babies had weight more than / equal to 2.5 kg(10). In a study by Mukhopadhyay P. , Chaudhuri R. et. al. it was found that 38.9% babies were of Low birth weight(17).

In present study 20(5.71%) teenaged mothers needed ICU care and there were 3(0.85%) maternal deaths. In study conducted by Ogunwale O. & Rangiah S. it was found that there were 0.5% maternal deaths(10).

Limitations Of This Study

This study is reterospective and so no feedback was possible for evaluation of sociocultural, economic and educational background of the teenaged grvida. Also the perinatal outcome could not be assessed beyond the time of delivery.

CONCLUSION

- 1) Teenage pregnancies include cases of early marriage and those resulting from sexual offences.
- 2) Teenage pregnancies are associated with maternal and perinatal complications.
- 3) Larger prospective studies are needed in this area to understand the exact outcomes of teenage pregnancies and the contributing factors to these outcomes so that preventive measures can be undertaken.
- 4) Identification of teenage couples and promotion of contraceptive usage is need of the hour to prevent morbidity and mortality for those married in childhood.
- 5) POC SO victims need nutritional, psychological support apart from good quality healthcare through the involvement of non governmental organizations.

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