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A Clinical Study of Obstetrical and Perinatal Outcome In Teenage Pregnancies In Central Referral Hospital (CRH), Gangtok

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ABSTRACT

Background: Teenage pregnancy can be defined as pregnancy that occurs after menarche up to the age of 19 years. It is one of the important causes of maternal as well as neonatal morbidity and mortality. There is an increased incidence of preterm deliveries in teenage girls with its associated complications in newborn such as increased incidence of hyaline membrane disease in newborn baby, anaemia of prematurity, neonatal hypoglycaemia, hyperbilirubinemia and need for neonatal intensive care unit admissions. **Aims and Objectives:** 1.To assess the quantum of problem of teenage pregnancy. 2. To ascertain the different risk factors associated with teenage pregnancy. 3. To evaluate outcome of pregnancy in teenage mothers. 4. To determine the extent and association of teenage pregnancy with poor obstetric outcome. **Materials and Methods:** It was a hospital based prospective case control study. All teenage pregnant patients who were admitted during the study period were included in the study and a representative group of equal number of non-teenage pregnant women who were admitted during the study period were included in the study. For statistical purposes p value less than 0.05 was taken as statistically significant. **Results:** The most common single complication in teenage pregnancies was found to be preterm deliveries which was seen in 15 (12%) patients followed by fetal distress (10.40%) Pre-Eclampsia (6.40%) and PROM (4.80%). Amongst non-teenage pregnancies the common complications seen were fetal distress (17.60%), PROM (8.80%). The incidence of PPH was found to be high in teenage pregnancies as compared to non-teenage pregnancies. The comparison of the neonates on the basis of incidence of low birth weight (LBW) showed that more LBW babies were born to teenage mother as compared to non-teenage pregnancies and the difference was found to be statistically significant ($P<0.05$). **Conclusion:** Teenage pregnancy is associated with increased incidence of maternal as well as neonatal complications. In additions to maternal and neonatal complications it also has an immense impact on psychosocial consequences on teenage mothers.

Key words: Teenage pregnancy; Maternal and neonatal outcome; NICU admission; Neonatal Mortality

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INTRODUCTION

Teenage pregnancy can be defined as pregnancy that occurs after menarche up to the age of 19 years. Worldwide, pregnancy related deaths are the main causes of death in 15-19 years old females and death rate from causes related to pregnancy are particularly high in girls less than 18 years.[1] There is an increased sexuality among teenagers the world over. In a developing country, teenagers account for 20 percent of the total population. Onset of sexual activity begins soon after menarche and there is a trend of menarche occurring at relatively younger age. This puts an increasing numbers of teenagers at the risk of being exploited. Ignorance of contraceptive methods amongst teenagers (particularly in developing countries such as India) as well as difficulty to obtain them (given the taboo attached with them particularly in rural parts) is one of the important causes of pregnancy occurring in teenagers.[2]

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Sexual activity, increased risk-taking behavior and early marriages are inevitably associated with teenage pregnancy. Pregnancy at this age is detrimental not only to the pregnant mother but also to the unborn child. Therefore, pregnancy in teenagers is rightly considered as high risk pregnancy. In context of developing countries, it does also have a dimension of having profound psychosocial impact not only on teenage mother but also on the entire family.[3]

Pregnancy in teenagers is often complicated by hyperemesis gravidarum, miscarriage, anemia, preeclampsia, eclampsia, and prematurity. Various complications which can be seen in teenage pregnancies include increased incidence of obstetric interventions in the form of instrumental deliveries or caesarean section. If proper medical care is not available then these deliveries may get complicated by obstructed labor, stillbirth or neonatal death. In some cases, this may even result in maternal mortality.[4]

There are biological, psychological, socio-demographic, behavioral factors that could influence the outcome of teenage pregnancy such as lack of information and access to family planning services leading to teenage pregnancy and its consequent adverse outcome. Being single and at school, the teenager may hide the pregnancy and therefore not utilize the available antenatal care services.[5] She may also try to terminate the pregnancy late in gestation for the same reason and end up with life threatening compilations like uterine perforation, sepsis and even death. Pelvis is underdeveloped because of the young age. The socioeconomic consequences of teenage pregnancy can be catastrophic particularly in developing countries where already a sizeable portion of population is living under utter poverty.[6]

The teenage pregnancy may result in school dropout, social ostracization and various psychological problems not only in the pregnant teenager but also her family members. The teenage girl who has still not achieved full maturity as to be able to take care of herself during difficult situation, can hardly be expected to take care of her newborn child. Moreover, there is an increased incidence of preterm deliveries in teenage girls with its associated complications in newborn such as increased incidence of hyaline membrane disease in newborn baby, anemia of prematurity, neonatal hypoglycemia, hyperbilirubinemia and need for neonatal intensive care unit admissions.[7] The incidence of low birth weight babies, shoulder dystocia, APGAR scores less than 7 at 5 minutes, hypoxic ischemic encephalopathy, respiratory distress, neonatal sepsis and meningitis and neonatal seizures have been reported to be higher in newborn babies of teenage mothers as compared to adult females. It must be noted that the maternal and neonatal outcome is reported to be better in older adolescents (16- 19 years) as compared to young adolescent girls (<16 years).[8]

With this background in mind we undertook this prospective study to find out obstetrical and perinatal outcome in teenage pregnancies.

MATERIALS AND METHODS

This was a hospital based prospective case control study which was conducted in the Department of Obstetrics and Gynecology, Central Referral Hospital (CRH), Tadong, Sikkim after due approval from the institutional ethical committee. Teenage girls (cases) and non-teenage women (control) were included in the study after obtaining due consent either from the teenage girl (age more than equal to 18 years) or her caregiver (age less than 18 years) on the basis of a predefined inclusion and exclusion criteria. In control group consent was obtained from the patient herself. A detailed history of present pregnancy regarding date of last menstrual period, previous antenatal visits, vaccination against tetanus etc. was obtained from all the patients. History of bleeding, per-vaginal discharge or leaking if present was noted. Detailed past history, obstetric and menstrual history, family and personal history was noted. Evidence of anemia and severity of anemia was also noted. Presence of edema was recorded. All previous ultrasound reports were reviewed. If the patient was found to have been referred from some other hospital then the reason for such referral was also noted down. Relevant systemic examination was done. Any abnormal heart sounds (murmurs or ejections clicks) or presence of wheeze or crepitations were also noted. Vital data like pulse and blood pressure were recorded. Per abdominal examination was done to note down the height of uterus, position, lie, presence or absence of contractions, presence of FHS and its rate and rhythm were noted. Any signs of obstructed labor like bladder wall edema, bowel distension and bandl's ring were also noted. Per-vaginal examination was done in all cases (except in cases where it was contra-indicated such as in case of central Placenta Previa, antepartum hemorrhage etc.) to look for cervical effacement, dilatation, presence or absence of membranes, station of presenting part, presence of caput or moulding, pelvic assessment was done by Muller Munro- Kerr method and disproportion if any was noted. Any evidence of vaginal leak, foul smelling discharge, bleeding, presence of clots, vaginal or cervical tears was noted. The patients were divided into booked or unbooked cases depending upon whether they attended antenatal clinics properly or not.

Basic investigations complete blood count, bleeding time, clotting time, blood grouping and Rh typing, HIV, VDRL,

HbSAg were done. Baby whether born alive or still born were noted. All deliveries/cesarean sections were attended by a pediatrician and neonatal resuscitation if needed was also done by the attending pediatrician. APGAR scores at 1 minute and 5 minutes were noted. If 5-minute Apgar score was found to be less than 7 then the APGAR score was taken up to 20 minutes. Causes of perinatal and neonatal mortality were noted. Mothers were followed up in postoperative period and any complications such as fever, necessity of blood transfusions, wound infection or gaping (in case of LSCS), bleeding PV and number of days of hospital stay were noted.

Inclusion criteria

1. All teenage pregnant women (aged 13-19 years) admitted for delivery at CRH.
2. Patient or caregiver given consent to participate in the study.
3. Control Group - Non teenage pregnant women of same gestational age as of teenage pregnant women and given consent to participate in this study were selected.

Exclusion criteria

1. Patients/ Caregiver who refused to give consent to participate in this study.

RESULTS

This was a hospital based prospective case control study of outcome of women with teenage pregnancies in CRH. It was studied for a period of 1 year (1/1/2018-31/12/2018). During this period a total 2268 deliveries took place in our institute out of which there were 125 teenage deliveries. Hence the teenage pregnancy rate over the study period was found to be 5.51% in our institute. Amongst the teenage pregnancy cases only 12 (9.60 %) patients were those who came for follow up while remaining 113 (90.40%) patients were referred to our hospital from other government institutes (Primary health centers, rural hospitals and subdistrict hospitals) or private hospitals. In contrast to teenage pregnancies majority of the Non-Teenage patients were under our follow up (53.60%) while 58 (46.40%) patients were referred from outside. The difference was found to be statistically significant (P<0.05). The mean age of the patients in teenage and non-teenage pregnancies group was found to be 18.5 +/- 0.66 years and 28.48 +/- 4.41 years respectively. The difference in the mean age of the patients was found to be statistically significant (P < 0.0001). Majority of the patients in teenage group were of 19 years (57.60%) (Table 1).

In our study, 3 teenagers (2.40%) were unmarried while remaining 122 (97.60%) were married.

Table 1: Comparison of age group of the studied cases

Age group in years	Teenage Pregnancies		Non- Teenage Pregnancies	
	No. of cases	Mean age (yrs)	No. of cases	Mean age (yrs)
15 years & below	1	0.80%	0	0.00%
16-19 years	124	99.20%	0	0.00%
20-30 years	0	0.00%	84	67.20%
Above 30 years	0	0.00%	41	32.80%
Total	125	100%	125	100%
Mean Age	18.5 +/- 0.66		28.48 +/- 4.41	

P<0.0001 (Significant), 95% CI=9.1945 to 10.7655

There was no unmarried pregnant woman in Non-Teenage pregnancy group. These findings highlight the practice of teenage marriages in developing countries including India. Majority of the patients in teenage pregnancy group were primigravida (92.80%) whereas only 9 patients (7.20%) were multigravida. In non-teenage pregnancies patients 66 (52.80%) patients were multigravida and 59 (47.20%) patients were primigravida. The statistical analysis showed that there was statistically significant difference in gravid status of the women in both the groups (P<0.0001). Out of the 125 patients with teenage pregnancies anemia was seen in 51 (40.80%) patients whereas PIH and thrombocytopenia was seen in 8 (7.20%) and 1 (0.80%) patients respectively.

In cases of Non-Teenage pregnancies anemia and gestational diabetes was seen in 30 (24%) and 2 (1.60%) patients respectively. Thrombocytopenia (1.60%), Systemic lupus erythematosus (0.80%) and Rh negative blood group (0.80%) were uncommon comorbidities in Non-Teenage pregnancies. The incidence of PIH and gestational diabetes was found to be comparable in both the groups (P>0.05). Only anemia was found to be higher in teenage pregnancies as compared to non-teenage pregnancies and the difference was found to be statistically highly significant (P < 0.0001). In teenage pregnancy group 120 (96%) patients were para "0" whereas 5 (4%) patients were para "1". In Non-Teenage pregnancies 74 (59.20%) patients were para "0" whereas 41 (32.80%) patients were para "1".

The analysis of the cases on the basis of previous pregnancy outcome showed that out of 9 patients with h/o previous pregnancy in teenage pregnancy group 4 (3.20%) patients had spontaneous abortions and 1 (0.80%) patient had a history of intrauterine fetal demise. Normal vaginal delivery and cesarean delivery was seen in 3 (2.40%) and 1 (0.80%) patients respectively. Out of 66 patients with history of previous pregnancy in Non-Teenage pregnancy group normal vaginal delivery occurred in 40 (32%) patients whereas cesarean delivery was done in 7

(5.60%) patients. H/o spontaneous abortion in previous pregnancy was present in 19 (15.20%) patients in Non-Teenage pregnancies group.

Out of the 125 fetuses the most common presentation was found to be cephalic presentation which was seen in 120 (96%) teenage pregnancies and 121 (96.80%) Non-Teenage pregnancies. Breech presentation was seen in 3 (2.40 %) and 2 (1.60%) patients in teenage group and non-teenage group. Transverse lie was seen in 1 (0.80%) patient in both the groups.

Brow presentation was seen in 1 patient (0.80%) in Non-Teenage pregnancies group.The analysis of studied cases on the basis of mode of delivery showed that in teenage pregnancy group 96 (76.80%) delivered by normal vaginal delivery whereas emergency and elective LSCS was done in 23 (18.40%) and 4 (3.20%) patients respectively. In Non-Teenage pregnancies 64 (51.20%) patients delivered by normal vaginal delivery whereas emergency and elective LSCS was done in 23 (18.40%) and 36 (28.80 %) patients respectively (Table 2).

The analysis of need for cesarean section in both the groups showed that LSCS for fetal distress was done in 12 (10.40%) and 22 (17.60%) patients in teenage and non-teenage respectively. In teenage pregnancies the other causes of LSCS included cephalopelvic disproportion (3.20%), failed induction (1.60%), non-progression (1.60%) and patient request (1.60%). In Non-Teenage pregnancies after fetal distress patient request (12%), PROM (4.80%) and failed induction (4%) were the common causes of LSCS. The LSCS rate was found to be higher in Non-Teenage pregnancies as compared to teenage pregnancies and the difference was found to be statistically significant (P<0.0001) (Table 3).

The analysis of cases on the basis of complications during present pregnancy showed that the most common single complication in teenage pregnancies was found to be preterm deliveries which was seen in 15 (12%) patients followed by fetal distress (10.40%) Pre-Eclampsia (6.40%) and PROM (4.80%). Amongst non-teenage pregnancies the common complications seen were fetal distress (17.60%), and PROM (8.80%) (Table 4).

Amongst the teenage pregnancy cases 8 (6.40%) patients developed postpartum hemorrhage where as in amongst patients with Non-Teenage pregnancies 1 (0.80%) patients developed postpartum hemorrhage. The incidence of PPH was found to be high in teenage pregnancies as compared to non-teenage pregnancies and the difference was found to be statistically significant (P=0.0357). Amongst the teenage pregnancy cases 5 (4 %) patients needed blood transfusion

Table 2: Mode of Delivery of the studied cases

Type of Delivery	Mode of Delivery			
	Teenage Pregnancies		Non-Teenage Pregnancies	
Normal Delivery	96	76.80%	64	51.20%
Elective LSCS	4	3.20%	23	18.40%
Emergency LSCS	23	18.40%	36	28.80%
Forceps/ Vaccum Delivery	2	1.60%	2	1.60%
Total	125	100.00%	125	100.00%

Table 3: Indications for LSCS in studied cases

Indication For LSCS	Teenage	Non Teenage
Failed Induction	2	5
Non-Progress Of Labour	2	1
Fetal Distress	12	22
Cephalopelvic Disproportion	4	0
Placenta Previa	0	2
Abruptio Placenta	0	1
Patient request	2	15
Cord Prolapse	0	0
Multiple Pregnancy	0	0
Breech Presentation	1	1
Transverse Lie	1	1
PROM	1	6
Severe PreEclampsia	2	4
Gestational Diabetes	0	1
Total	27	59

whereas amongst patients with Non-Teenage pregnancies 1 (0.80%) patient needed blood transfusion. The need for blood transfusion was found to be high in teenage pregnancies as compared to non-teenage pregnancies however the difference was found to be statistically insignificant (P=0.2131).

The comparison of the neonates on the basis of incidence of low birth weight (LBW) showed that more LBW babies were born to teenage mother as compared to non-teenage pregnancies and the difference was found to be statistically significant (P<0.05) (Figure 1).

APGAR scores of all the neonates were recorded. APGAR score less than 6 was taken as suggestive of birth asphyxia. 4 (3.20%) and 2 (1.60%) neonates were found to have an APGAR score less than 6 at 5 minutes in teenage and non-teenage pregnancies respectively. The APGAR score at 5 minute was found to be comparable with no statistically significant difference (P>0.05). 23 Neonates born to teenage mothers needed some form of resuscitative measures including endotracheal intubation and IPPV (1.60 %), intubation and suctioning (3.20%), Bag and mask

Table 4: Complications in studied cases

S.No	Complication	Teenage pregnancies	Non teenage pregnancies	P Value
1	Fetal Distress	13	22	0.1440 (Not Significant)
2	Premature Rupture Of Membranes	6	11	0.3151 (Not Significant)
3	Intrauterine Growth Retsriction	4	1	0.3699 (Not Significant)
4	Oligohydramnios	5	2	0.4465 (Not Significant)
5	Preterm Delivery	15	15	1.0000 (Not Significant)
6	Non Progression of Labor	2	1	1.0000 (Not Significant)
7	Cephalopelvic Disproportion	4	0	0.1220 (Not Significant)
8	Meconium stained Liquor	2	8	0.1023 (Not Significant)
9	Pre-Eclampsia	8	4	0.3758 (Not Significant)
10	Intrauterine Fetal Demise	2	0	0.4980 (Not Significant)
11	Failed induction of Labor	2	5	0.4465 (Not Significant)
12	Previous LSCS in labor	1	5	0.2131 (Not Significant)
13	Placenta Previa	0	2	0.4980 (Not Significant)
14	Previous LSCS	0	4	0.1220 (Not Significant)
15	Precious pregnancy	0	1	1.0000 (Not Significant)
16	Intrahepatic cholestasis of pregnancy	0	1	1.0000 (Not Significant)
17	Polyhydramnios	0	1	1.0000 (Not Significant)
18	Brow Presentation	0	1	1.0000 (Not Significant)
19	Transverse Lie	0	1	1.0000 (Not Significant)
20	Breech Presentation	0	0	1.0000 (Not Significant)

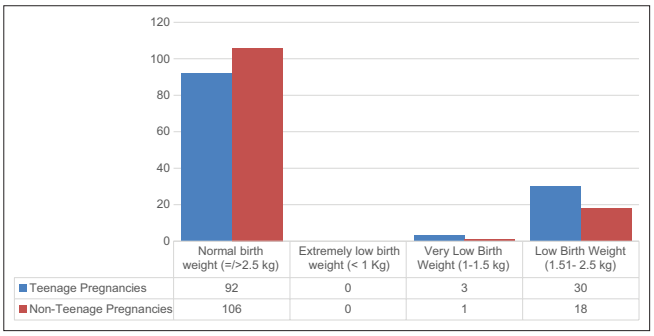

Figure 1: Birth Weight Of the neonate.

ventilation (5.60%) and Oxygen inhalation (8.00%). In babies born to Non-Teenage mothers 8 neonates required either oxygen inhalation or some form of resuscitation.

The analysis of newborns who required some or the other form of resuscitation showed that in both the groups the difference was found to be statistically significant (P<0.05). The analysis of newborn babies for admissions in NICU showed that in teenage pregnancies out of 27 NICU admissions 12 (9.60%) neonates were admitted due to respiratory distress. The other indications included transient tachypnea of newborn (4.80%), LBW/Preterm care (4%) and birth asphyxia (3.20%). In non-teenage pregnancies out of 15 admissions preterm/LBW care (6.40%) was the most common indication for NICU admissions followed by respiratory distress (3.20%) and Transient tachypnea of newborn (0.80%). 2 (1.60%) babies were admitted for birth asphyxia (APGAR less than 6).

Finally, the analysis of neonatal mortality patterns of the studied cases showed that the 1 neonate in teenage pregnancies died during neonatal period due to hypoxic Ischemic Encephalopathy there was no neonatal mortality in Non-Teenage pregnancies group. The overall neonatal mortality in Teenage and Non-Teenage group was found to be 0.80 % and 0.00% respectively.

DISCUSSION

This study was carried out in the Department of Obstetrics and Gynaecology, Central Referral Hospital (CRH), Tadong, Sikkim. The study was conducted over a period of one year (January 2018-December 2018) and the purpose of the study was to assess the quantum of problem of teenage pregnancy as well as to ascertain the different risk factors associated with teenage pregnancy and to evaluate outcome of pregnancy in teenage mothers. During the study period 2268 deliveries took place in our institute out of which 125 (5.51%) were teenage deliveries while remaining 2143 (94.49%) pregnancies were nonteenage pregnancies. Hence teenage pregnancy rate was found to be 5.51% in our institute.

The incidence of teenage pregnancies in our study was found to be comparable to the teenage pregnancy rate as reported by Srivastava S et al.,[9] who reported teenage pregnancy rate to be 4.02%. Relatively low incidence of teenage pregnancy rates were reported by Kappeler EM et al.[10]

Mean age of the patients in studied cases was similar to the mean age of cases reported by Masoumi SZ et al.,[11] (17.3 years) and DG Scolov et al.,[12] (17.81 years). Similar mean age was reported by Landry E et al.,[13] who reported it to be 17 years.

In our study majority of the patients were married (97.60%). Only 3 patients were found to be unmarried. This is likely because unlike developed world in our country teenage pregnancies are usually the consequence of child marriage or marriages in teenage groups. Relatively more number of teenage pregnant patients was found to be married in our study as compared to the studies conducted by Ochen AM[14] and Kavita N et al.,[15] who reported that 14.81% and 34.8% patients were unmarried. On the other hand Sharma AK et al[16] in their study found that all teenage pregnant females were married.

In our study majority of the patients (92.80%) were primigravida whereas only 9 (7.20%) patients were multigravida. Since in our study most of the teenage pregnancies were the result of early marriage taking place after 15 years most of our patients were primigravida. Almost all the authors have reported that majority of the teenage pregnant patients were primigravida. The studies conducted by authors such as Okram SD et al.,[17] Kumar et al.,[18] and Stevens SC et al.,[19] found that 86%, 83.2% and 87% patients with teenage pregnancies were primigravida.

The incidence of anaemia in our study was found to be similar to the incidence of anaemia reported by Pinho-Pompeu Metal,[20] who found the incidence of anaemia in teenage pregnancies to be 41.2%. Other authors such as Shravage JC et al.,[21] have found a higher percentage of teenage pregnancies to be having anaemia (84.2%).

The study of patients on the basis of presence of pregnancy induced hypertension showed that pregnancy induced hypertension was present in 7.20% of the patients with teenage pregnancies whereas in majority of the patients (92.80%) there was no PIH. Shaikh S et al.,[22] and Parra-Pingel PE et al.,[23] have reported the incidence of PIH in teenage pregnancies to be 15% and 27.4% respectively. A still higher incidence of PIH was reported by Saxena P et al.,[24] 79 who reported that PIH was present in 27.4% of teenage pregnancies.

The analysis of the studied cases on the basis of mode of delivery showed that in majority of the patients (76.80%) the patients delivered by normal vaginal delivery whereas remaining 23.20% patients either delivered by either instrumental delivery or LSCS. The study conducted by Verma et al.,[25] have reported that approximately 82.50% and 83.90% were delivered by normal vaginal delivery whereas, Narukhtrpichai P et al.,[26] reported that 59.7% teenage pregnancies were delivered by normal vaginal delivery.

The LSCS rates seen in our study were comparable to the LSCS rates reported by Bhattachrya et al.,[27] who reported that approximately 25% teenage pregnant patients had to undergo LSCS. The other authors such as Mesleh RA et al.,[28] have reported a relatively low LSCS rates amongst the patients with pregnancy in teenage group. In our study out of 125 patients, instrumental delivery was done in 1.60% patients. The analysis of the studies on teenage pregnancies showed that the authors such as Mesleh RA et al.,[28] and Abu Heija[29] have reported rates of instrumental deliveries to be 5% and 9% respectively.

Similar to our study Gazala Y et al.,[30] also reported that fetal distress was the most common indication for LSCS in teenage pregnancies which was seen in 50.70% of the studied cases. The other common indications reported by the authors were CPD (7.04%), PIH (2.01%) and failed induction (2.01%). In contrast to our study and the study conducted by Gazala Y et al.,[30] the authors such as Rita D et al.,[31] have reported CPD to be the most common indication for LSCS which was seen in 2/3rd of the studied cases in the study conducted by them. The other indications for LSCS as reported by the authors were PIH (12%), fetal distress (9.4%) and failed induction (1.5%).

The rate of preterm deliveries as seen in our study was found to be similar to the rate of preterm deliveries as reported by Nair A et al.,[32] who reported that preterm deliveries were seen in 18.22% of the studied cases. IN this study fetal distress, pre-eclampsia and PROM was reported in 6.69%, 14.87% and 6.50% cases respectively. A higher percentage of preterm deliveries were reported by Gazala Y et al.[30] Fetal distress was reportedly seen in 9.24% patients as reported by Gazala Y et al[30] and this was found to be similar to our study. In our study 26.40% of the cases delivered low birth weight babies.

Verma et al.,[25] in their study of teenage pregnancies showed that 35% of the patients with teenage pregnancy had a low birth weight baby. In contrast to this Dos Santos GH[33] found rate of low birth weight babies to be 71.42%. Mundhe et al reported the incidence of respiratory distress syndrome in the neonates born to teenage mothers to be 11.3% which was similar to our study. The other morbidities for which neonates required NICU admission as reported by Mundhe et al included prematurity and low birth weight (54%), meconium aspiration syndrome (11.3%) and congenital anomalies (1.9%).[34]

Finally Neonatal mortality was found to be similar in study conducted by Bindal J et al.,[35] who reported neonatal mortality in teenage pregnancy to be 1.2%. Althabe et al.,[36] found a higher neonatal mortality rate of 15.2% in their study. Neal S et al.,[37] reported neonatal mortality to be 4.85% cases of teenage pregnancy.

CONCLUSION

Teenage pregnancies are one of the important causes of maternal as well as perinatal morbidity and mortality. The problem is more prevalent in rural areas and in families belonging to low socioeconomic status. Unlike in developed countries teenage pregnancies in India are due to early marriage and such teenage mothers usually have a supportive family system. Despite all these factors a significant number of teenage pregnancies result in maternal as well as perinatal mortality and morbidity. The usual causes of maternal morbidity such as anemia, pregnancy induced hypertension and chances of operative interventions are seen more frequently and with increased severity in teenage pregnancies. The chances of LSCS are also more in teenage pregnant females as compared to their adult counterparts. Post-partum hemorrhage was found to be statistically significantly higher in teenage pregnancies group. More incidence of anemia along with increased risk of PPH makes management of these patients difficult at places where facilities for blood transfusion are absent. Neonates born to teenage mothers were found to be more likely to be low birth weight and more likely to need some or the other form of resuscitation. This makes it imperative that pregnant teenage girls should be delivered at a place where NICU facilities are available.

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AA- Concept and design of the study, interpreted the results, prepared first draft of manuscript and critical revision of the manuscript, Statistical analysis and interpretation, Literature review and manuscript preparation; **AA-** Design of the study, statistically analyzed and interpreted, preparation of manuscript and revision of the manuscript, concept and coordination of the overall study.

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