

Obstetric and Perinatal Outcome of Teenage Pregnancy

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ABSTRACT

Background: Adolescents are at higher risk during childbirth than women between 20 to 25 years. Adolescent childbearing initiates a syndrome of failure: Failure to complete one's education; failure in limiting family size; failure to establish a vocation and become independent. This study was done to find out the obstetric and perinatal outcome of teenage pregnancy along with factors contributing to teenage pregnancy.

Methods: A prospective, cross sectional study was carried out in College of Medical Sciences Teaching Hospital (CMSTH), Bharatpur during the period for two years from September 2008 to August 2010. Pregnant girls ≤ 19 years admitted to labour ward were taken for the study. Cases planned for abortion and MTP were also taken.

Results: One hundred cases of pregnant teenagers were admitted in CMSTH during a period of two years. Incidence was 6.85%. In our study, most of the teenagers were unbooked, from low socioeconomic status and with no or inadequate education. They had little knowledge about contraception and less number of teenagers used temporary means of contraception. Because of our social custom of early marriage, most of the teenage mothers were married. All these factors were correlated with teenage pregnancy in present study.

Conclusions: This study failed to show any statistically significant difference in the incidence of anaemia, LBW babies, preterm delivery, hypertensive disorder of pregnancy, mode of delivery in different ages of teenage mothers. However, there was significant difference in the incidence of perinatal death in different ages of teenage mothers indicating that perinatal deaths were more in younger teenagers.

Keywords: obstetric outcome, perinatal outcome, risk factors, teenage pregnancy.

INTRODUCTION

Adolescence is a period of transition from childhood to adulthood. According to WHO the period of adolescence extends from 11-19 years.¹ Pregnancy during this period is called teenage pregnancy. Only in the later part of the 20th century, knowledge on its consequences emerged as an issue of public health concern.² The median age at first marriage for every married women in Nepal (age 15-49) is 16.6 years, which indicates that majority of newly married couples are adolescents.³ In developing countries like Nepal, teenage problems are different because early marriage is the social practice; 40-50%

girls are married and become pregnant before the age of 20.

The study to assess the pregnancy outcome in teenage mothers in the Nepalese society will be of utmost importance to plan breaking the cycle of early marriage, early pregnancy, difficult deliveries, maternal and perinatal mortality and morbidity

METHODS

A prospective, cross sectional study with purposive sampling of teenage mothers was carried in this study.

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The study was carried out at College of Medical Sciences Teaching Hospital (CMSTH), Bharatpur, Nepal, during the period for two years from September 2008 to August 2010. The study involved data collection only and it did not involve any trial of operations. The ethical clearance was taken through our ethical clearance committee of CMSTH, Bharatpur, following presentation by the candidate in maternal and perinatal mortality audit meeting. A verbal patient consent was taken in this study. The pregnant girls aged ≤ 19 years of any gravid and any period of gestations admitted to labour ward were taken for the study. While pregnant women aged >19 years, pregnant women with preexisting medical diseases (congenital and rheumatic heart disease, chronic hypertension, overt diabetes) and twin pregnancies and pregnancies with ultrasonographically diagnosed congenital malformation of fetus were excluded from the study.

All the cases of teenage pregnancy under 19 years of age who were admitted to the labour ward in CMSTH were studied. A structured proforma was used to collect information (Refer to Proforma). Cases planned for abortion and MTP were also taken. The age of women at the time of birth or abortion was reported as completed years of age (also referred to as age at the last birthday or age at the event).

All the collected data were entered in Microsoft Office Excel Worksheet and statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 16.0. Statistical analysis was done with appropriate statistical methods and compared with international standard literature. Significance of correlation was tested statistically. Different statistical test of significance were applied to find the P value. P value less than 0.05 was considered statistically significant.

RESULTS

During the study period there were 100 (6.85) teenage pregnant females admitted in College of medical sciences teaching hospital, Bharatpur. In CMSTH 71% of teenage mothers were unbooked cases. Total 68% of teenagers belonged to low socioeconomic class.

There was 1 case of abortion at 6 weeks, 10 preterm deliveries, 86 term deliveries and only 3 post-term deliveries (Table 1).

Table 1. Relation between preterm deliveries and maternal age

| | Age (yrs) | | | | | Total | p value |
|-------------|-----------|--------|--------|--------|--------|----------|---------|
| | 14 | 16 | 17 | 18 | 19 | | |
| Preterm (n) | 1 (10) | 2 (20) | 1 (10) | 2 (20) | 4 (40) | 10 (100) | 0.55 |

Only 7% had used temporary contraception. Only 30% had the knowledge of contraceptive. Comparatively use of contraception was lesser in younger teens. While 39% cases gained 10 kilograms or more weight during pregnancy.

Weight gain was directly related to period of gestation i.e. weight gain was less in preterm deliveries. Younger mothers gained lesser weight during pregnancy when compared at same period of gestation.

Thirty percent had less than 10 gm% haemoglobin. Unbooked teenage pregnant females' haemoglobin was comparatively lower than that in the booked cases. Of the 99 teenage deliveries, 65 were normal vaginal deliveries (NVD), 21 were lower segment cesarean sections (CS), 7 were vacuum deliveries and forceps deliveries were 6 (Table 2).

Table 2. Incidence of mode of deliveries in relation to the age group

| Age (yrs) | Mode of delivery | | | | Total |
|-----------|--------------------|------------------------|-----------------------|-------------------|-------------|
| | NVD Number (n) (%) | Forceps Number (n) (%) | Vacuum Number (n) (%) | CS Number (n) (%) | |
| 14 | 1 (50%) | 0 | 0 | 1 (50.0%) | 2 (100%) |
| 15 | 1 (100%) | 0 | 0 | 0 | 1 (100%) |
| 16 | 5 (83.3%) | 0 | 1 (16.7%) | 0 | 6 (100%) |
| 17 | 11 (91.7%) | 0 | 0 | 1 (8.3%) | 12 (100%) |
| 18 | 21 (72.4%) | 1 (3.4%) | 2 (6.9%) | 5 (17.2%) | 29 (100%) |
| 19 | 26 (53.06%) | 5 (10.20%) | 4 (8.16%) | 14 (28.57%) | 49 (99.99%) |
| | 65 (65.65%) | 6 (6.06%) | 7 (7.07%) | 21 (21.21%) | 99 (99.99%) |

P value= 0.650

Overall incidence of preeclampsia was 5%. All the cases of preeclampsia were primigravida (G1) (Table 3).

Table 3. Preeclampsia in relation to maternal age

| Age (yrs) (Gravida) | Pre-eclampsia Number (n) | Percent |
|------------------------|-----------------------------|---------|
| 16 (G1) | 1 | 20% |
| 18 (G1) | 2 | 40% |
| 19 (G1) | 2 | 40% |
| Total | 5 | 100% |
| Overall incidence | 5% | |

Overall incidence of eclampsia (2 were antepartum and 2 were intrapartum eclampsia) was 4% in teenage mothers (Table 4). All the cases of eclampsia were primigravida (G1).

Table 4. Eclampsia in relation to maternal age

| Age (yrs) (Gravida) | Pre-eclampsia Number (n) | Percent |
|------------------------|-----------------------------|---------|
| 14 (G1) | 1 | 25% |
| 17 (G1) | 1 | 25% |
| 18 (G1) | 1 | 25% |
| 19 (G1) | 1 | 25% |
| Total | 4 | 100% |
| Overall incidence | 4% | |

Out of 99 babies, 23.23% had birth weight less than 2.5 kg. Birth weight was comparatively less in mothers who gained less weight in pregnancy and in younger teens (Table 5) (Figure1).

Table 5. Birth weight in relation to maternal weight gain

| Weight gain in pregnancy (kg) | Birth Weight (kg) | | Total | P value |
|-------------------------------|-------------------|------|-------|---------|
| | <2.5 | ≥2.5 | | |
| 4 | 1 | 0 | 1 | |
| 5 | 2 | 0 | 2 | |
| 6 | 2 | 1 | 3 | |
| 7 | 1 | 3 | 4 | 0.000 |
| 8 | 13 | 8 | 21 | |
| 9 | 4 | 25 | 29 | |
| 10 | 0 | 28 | 28 | |
| 11 | 0 | 11 | 11 | |
| Total | 23 | 76 | 99 | |

Correlation coefficient between birth weight of babies and weight gain in pregnancy in teenage mothers is 0.710. There is a positive correlation and it is significant at 0.01 level.

Out of 98 babies born live, 15 (15.306) had APGAR score of less than or equal to 6 in 5 minute. 1 case of abortion and 1 case of IUFD are not included in this. There were total 15 (15.306) NICU admissions. 1 case of abortion and 1 case of IUFD are not included in this.

Out of 99 deliveries, there were 6 (6.06) cases of perinatal death. 1 case of abortion is not included in this. There was comparatively more perinatal deaths in younger teens (Table 6).

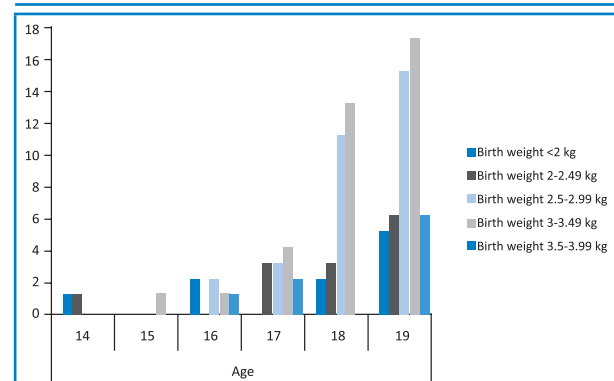


Figure 2. H. pylori density

Table 6. Relation between maternal age and perinatal death

| | Age (yrs) | | | | | | Total | P value |
|---------------------|-----------|----|----|----|----|----|-------|---------|
| | 14 | 15 | 16 | 17 | 18 | 19 | | |
| Perinatal death (n) | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 0.000 |
| Total | 1 | 1 | 1 | 1 | 1 | 1 | 6 | |

Correlation coefficient between maternal age and perinatal death is -0.373. There is negative correlation and it is significant at the 0.01 level.

Out of 100 teenage pregnants, 70% had early marriage and early childbearing because of the social custom, 25% took self decision and 5% gave history of becoming pregnant because of peer pressure.

DISCUSSION

Pregnancy during adolescence is a significant problem globally, with the highest incidence rates occurring in developing nations. Although early childbearing has often been regarded as a social issue, there is mounting evidence that young maternal age may be linked to adverse infant outcomes including low birth weight (LBW), preterm birth, and intrauterine growth restriction resulting in newborns small for gestational age (SGA), as well as neonatal mortality. Since younger mothers are more likely to be poor and less educated and to have inadequate prenatal care and fewer social supports than older mothers, socioeconomic and lifestyle factors often have been cited as the main explanatory variables for disparities in reproductive outcomes. However, a number of studies have shown strong associations between maternal age and adverse infant outcomes even after controlling for these factors.⁴

The percentage of teenage deliveries in CMSTH was 6.85%. The incidence seems to be less may be because most of the teenage pregnant are poor and they either deliver at home or go to the nearby Bharatpur government hospital for delivery where all the maternity services are provided free of cost. Total booked cases were only 29% in CMSTH. Fewer antenatal visits could be due to low socioeconomic status, lack of education, lack of health facilities and/or lack of knowledge. According to the annual report of ministry of health of Nepal in fiscal year 2064/65, females less than 20 years with first ANC visit accounted for only 14.7% of the total expected pregnancies among the total MWRA.⁵ Sixty eight percent of the total teen mothers were from low socioeconomic class. Lower socioeconomic status itself is a risk factor for teenage pregnancy and its adverse outcome.⁶ In our study since most of the teenage mothers were from lower socioeconomic status, most of their educational status was not appropriate for their age. In a study by Fraser et al in 1995, 5% of age less than 17 years and 15% of age 18-19 years teen mothers had age inappropriate education.⁷ There was no significant difference between the incidence of preterm deliveries and age of women in our study in contrast to the study done by Fraser where they have found that preterm birth was attributed to inherent risk in teenage women.⁷ In our study only 7% had history of using temporary means of contraception and only 30% had the knowledge of contraception. This could be one of the reasons for early childbearing in teenagers.⁸ In a study conducted by Kaisa Raatikainen et al in 2006, intrauterine device was used by only 3.8% of teenagers compared to 10.1% of adults.⁹ The normal average weight gain in an average size female with a singleton pregnancy is taken as 11 kilograms. In our study only 11% teenagers had 11 kilograms weight gain in pregnancy and younger women gained less weight comparatively. Poor weight gain is contributed by various factors like low socioeconomic status leading to malnutrition, lack of health education, lack of antenatal care and lack of support. Studies have shown that inadequate maternal weight gain is associated with low birth weight, SGA babies and preterm births.¹⁰ A study by Xi-Kuan Chen et al in 2007 had 8.48% incidence of low (<0.16kg/week) weight gain in teenage pregnancy.¹¹ Anaemia is defined as hemoglobin concentration less than 10 gram% during pregnancy.¹² In our study 30% had less than 10 gram% haemoglobin. Unbooked teenagers were comparatively more anaemic than that of booked cases. In our study there was no significant association between the age of women and mode of delivery in contrast to one study where it was found that teenagers are 46% less likely to have an emergency or elective cesarean section compared with women aged 25- 29 years but they are at higher risk of instrumental deliveries.¹³ In another

study teenage mothers ≤ 15 years were significantly more likely to undergo emergency cesarean section.¹⁴ While there is some evidence for increased risk of pregnancy induced hypertension for pregnant nulliparous teenagers compared with adults, studies that have investigated its incidence among nulliparous teenagers compared with adults have not found any difference between the two groups in one study after adjusting for confounding factors such as cigarette smoking, supporting the view that teenage pregnancy complications can be prevented with regular ante- and postnatal care.¹⁵ In our study there was no significant association between the age of women and hypertensive disorders of pregnancy. Out of 99 babies, 23 were low birth weight babies irrespective of their period of gestation. Younger teenagers and those who gained inadequate weight in pregnancy gave birth to smaller babies comparatively. Studies have shown that young maternal age is associated with increased risk of low birth weight.¹¹ In our study there was no significant association between the age of mother with APGAR score and NICU admission. Only the incidence of perinatal mortality was significantly associated with the age of mother in our study indicating that perinatal deaths were more in younger teens.¹⁶ An article published by Mariam found an increased risk for infant deaths in adolescent pregnancy.¹⁷ There was no maternal mortality in our study.

CONCLUSIONS

In our study most of the teenage mothers were from low socioeconomic status, with less education, with less antenatal visits, with less knowledge of contraception, with less weight gain, and were anaemic. However, there was no significant association between age of mother with preterm birth, hypertensive disorders, mode of delivery, low APGAR score and NICU admission except for perinatal deaths. Sample size is one of the limitations of our study.

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