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Original Research Article

Sociodemographic Profile and Fetal Outcome in Teenage and Adult Mother: A Comparative Study

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Abstract

Aim: The aim of the present study was to find out the incidence of teenage pregnancy, to study the maternal and fetal outcome in teenage pregnancy and to compare the outcome of teenage pregnancy with that of an adult mother.

Methods: The present study was conducted in the Department of Obstetrics and Gynecology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India for 1 year. 100 cases of teenage pregnancy (13-19 years) were compared with 100 cases of controls (20-25 years) for fetal outcome admitted in the Department of Obstetrics and Gynecology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India for the period of one year. All the primigravida teenage patients were included in the study until we got 100 cases. For comparative study, we took 100 cases of adult pregnancy by random selection.

Results: Statistically, we found a significant difference in mean age, socioeconomic status, occupation, education level, family and area in both groups ($p < 0.05$). But on the basis of religion both group were found statistically indifferent (p-value > 0.05). The teenage mothers had a higher proportion (25%) of preterm deliveries as compared to the adult mothers (5%) while adult mothers had a higher proportion of post-term pregnancies (10%) as compared to the teenage mothers (5%). However, most of the deliveries were term delivery in both groups. The period of gestation during delivery was statistically significant in both groups (p-value 0.00). Vaginal delivery was the commonest mode of delivery in groups, 60% of teenage mothers and 75% of adult mothers delivered by vaginal rout. In teenage mothers, cesarean section (LSCS) was done in 30%, 5% delivered by assisted breech and 4% by forceps. While in adult mothers, LSCS was done in 15%, 8% delivered by assisted breech and only 1% delivered by forceps. Mode of delivery was significant in our study (p-value 0.01).

Conclusion: Appropriate antenatal and postnatal care are fundamental in reducing perinatal and maternal morbidity and mortality. The continuous evaluation of data in different geographical regions will help to improve strategies in the care of pregnant teenagers.

Keywords: teenage pregnancy, Adult Mother, Neonatal complication, profile, outcomes

Introduction

Teenage pregnancy is defined as pregnancy that occurs in women aged between 10 and 19 years, with some authors distinguishing teenagers aged between 15 and 19 years from younger teenagers aged between 10 and 14 years. [1] Annually, an estimated 21 million girls aged 15–19 years in developing countries become pregnant and approximately 12 million of them give birth, whilst almost 777 000 births occur in adolescent girls younger than 15 years. [2]

Usually growth restriction of fetus occured and cannot tolerate stress of labour results fetal distress and to manage this problem incidence of cesarean section/ instrumental delivery increased. [3] Lack of awareness, illiteracy, low socioeconomic condition, delay in seeking ante and intra natal care are the factors adding risk to increased operative interference and perinatal complications in adolescents. [4]

The variety inherent in these outcomes may be related to socio-economic factors. The difference in background among teenage mothers is a strong determinant of positive or negative outcomes.

The literature suggests that a low socio-economic level generally leads to negative outcomes in the early pregnancy. [5-7]

As early marriages are common in rural India and early motherhood is a celebrating event in our villages but in fact, early childbearing is associated with multiple health risks for both mother and baby. A teenage mother is at in increased risk for poor maternal weight gain and high maternal mortality rate and also associated with the toxemia of pregnancy, anemia, sexually-transmitted disease, preterm delivery and intrauterine growth retardation. The adverse fetal outcome includes preterm birth, low birth weight infants, stillbirth and birth asphyxia. [8]

Teenage pregnancy, a major public health issue for both mother and baby, is often associated with adverse health outcomes. [9] Pregnant teenagers are more prone to developing pregnancy-related complications such as obstructed labour, obstructed fistulae, preterm delivery small for age babies, developmental abnormalities and even maternal death. [10]

The aim of the present study was to find out the incidence of teenage pregnancy, to study the maternal and fetal outcome in teenage pregnancy and to compare the outcome of teenage pregnancy with that of an adult mother.

Methods

The present study was conducted in the Department of Obstetrics and Gynaecology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India. 100 cases of teenage pregnancy (13-19 years) were compared with 100 cases of controls (20-25 years) for fetal outcome admitted in the Department of Obstetrics and Gynaecology, Darbhanga Medical College and Hospital, Darbhanga, Bihar, India for the period of one year. All the primigravida teenage patients were included in the study until we got 100 cases. For comparative study, we took 100 cases of adult pregnancy by random selection.

Inclusion criteria: Only Singleton pregnancy was included.

Study group: up to 19 years of age at the time of the delivery.

Control group: 20-26 years.

Exclusion criteria: Women more than 26 years of age.

History of pre-pregnancy medical illness e.g. HT, diabetic, cardiac, renal, endocrine or autoimmune disease, Multiple gestation

Ethical Aspects: All the ethical aspects of the study were taken care of. The approval of the hospital's ethics was obtained prior to the commencement of the study. Informed consent was obtained from each woman recruited into the study. All patients were managed according to the department protocol and followed up clinically until they are discharged.

Statistical Analysis: Statistical product and service solution SPSS-21 software was used for statistical analysis. Chi-square and student't' test was applied as and when necessary. P value less than 0.05 was taken as statistically significant.

Result

Table 1: Distribution of sociodemographic profile in both groups

Variables Teenage	Mother N=100 (%)	Adult Mother N=100 (%)	X2 (df)	p value
Age in Mean (SD)	18.50(0.948)	22.78(2.030)	(t test) -24.787	0.000
Socioeconomic Status 1. High 2. Middle 3. Low	 2 (2) 40 (40) 58 (58)	 10 (10) 58 (58) 32 (32)	24.480 (2)	0.000
Occupation 1. House wife 2. Working	 95 (95) 5 (5)	 85 (85) 15 (15)	12.643 (1)	0.000
Education 1. Illiterate 2. Primary 3. Secondary 4. Graduate	 70 (70) 25 (25) 5 (5) 00 (0.0)	 25 (25) 45 (45) 20 (20) 10 (10)	79.150 (3)	0.000
Religion 1. Hindu 2. Muslim	 60 (60) 40 (40)	 55 (55) 45 (45)	3.090 (1)	0.080
Family 1. Nuclear 2. Joint	 40 (40) 60 (60)	 52 (52) 48 (48)	7.150 (1)	0.010
Area 1. Urban 2. Rural	 30 (30) 70 (70)	 55 (55) 45 (45)	24.040 (1)	0.000

The result showed that the mean age of teenage mother and adult mother was 18.50 and 22.78 years respectively. The maximum number of teenage mother belong to low socioeconomic status (58%), housewife (95%) by occupation, illiterate (70%), Hindu (60%) by religion, living in a joint family (60%) and belong to the rural background (70%). While in adult mother's maximum number of females from middle (58%) socioeconomic class, housewife (85%) by occupation, educated up to primary level (45%), Hindu (55%) by religion, living in nuclear family (52%) and belong to urban background (55%). Statistically, we found a significant difference in mean age, socioeconomic status, occupation, education level, family and area in both groups ($p < 0.05$). But on the basis of religion both group were found statistically indifferent (p-value > 0.05).

Table 2: Distribution of Cases According to Period of Gestation (weeks)

Period of Gestation	Mother N=100 (%)	Adult Mother N=100 (%)	X2 (df)	p value
Pre-term (32-36)	25 (25)	5 (5)	21. 511 (2)	0.000
Term (37-40)	70 (70)	85 (85)		
Post-term (>40)	5 (5)	10 (10)		

The teenage mothers had a higher proportion (25%) of preterm deliveries as compared to the adult mothers (5%) while adult mothers had a higher proportion of post-term pregnancies (10%) as compared to the teenage mothers (5%). However, most of the deliveries were term delivery in both groups. The period of gestation during delivery was statistically significant in both groups (p-value 0.00).

Table 3: Distribution of Cases According to Mode of Delivery

Mode of Delivery	Mother N=100 (%)	Adult Mother N=100 (%)	X2 (df)	p value
Assisted Breech	5 (5)	8 (8)	12.250 (3)	0.001
Forceps	4 (4)	1 (1)		
LSCS	30 (30)	15 (15)		
Normal Vaginal	60 (60)	75 (75)		

Vaginal delivery was the commonest mode of delivery in groups, 60% of teenage mothers and 75% of adult mothers delivered by vaginal rout. In teenage mothers, cesarean section (LSCS) was done in 30%, 5% delivered by assisted breech and 4% by forceps. While in adult mothers, LSCS was done in 15%, 8% delivered by assisted breech and only 1% delivered by forceps. Mode of delivery was significant in our study (p-value 0.01).

Table 5: Distribution of Fetal and neonatal complication in both groups

Variables	Mother N=100 (%)	Adult Mother N=100 (%)	X2 (df)	p value
IUGR	12 (12)	2 (2)	64.900 (8)	0.000
Low Birth Weight	30 (30)	15 (15)		
Birth Asphyxia	10 (10)	5 (5)		
Neonatal Sepsis	3 (3)	2 (2)		
Neonatal Hyperbilirubinemia	5 (5)	1 (1)		
Intestinal Perforation	1 (1)	0		
Congenital Anomalies	2 (2)	1 (1)		
MAS	10 (10)	2 (2)		
No Complication	25 (25)	70 (70)		

30% babies of the teenage mother had low birth weight (<2.5 kg) as compared to adult mother's babies (15%). Intrauterine growth retardation (IUGR) was found in 12% babies of the teenage mother while 2% babies of the adult mother were IUGR. 10% babies of a teenage mother and 5% babies of the adult mother had birth asphyxia at the time of delivery. 10% and 2% babies were affected by meconium aspiration syndrome (MAS) in teenage and adult mother respectively. Neonatal sepsis occurred in 3% in babies of a teenage mother and 2% in babies of the adult mother. Neonatal hyperbilirubinemia found in 5% and 1% in babies of teenage and adult mother respectively. A similar incidence of congenital anomalies (2%)

and (1%) was found in both groups respectively. Regarding fetal and neonatal complication, the difference was found statistically significant (p-value 0.00).

Table 6: Distribution of Fetal and neonatal mortality in both groups

Variables	Mother N=100 (%)	Adult Mother N=100 (%)	X2 (df)	p value
FSB	3 (3)	1 (1)	4.500 (4)	0.350
MSB	2 (2)	1 (1)		
Early Neonatal Death	2 (2)	1 (1)		
Neonatal Death	4 (4)	1 (1)		
Normal	90 (90)	95 (95)		

Fresh Still Birth (FSB) was 3% in teenage mother and 1% in the adult mother. While Macerated Still Birth (MSB) were 2% in teenage mother and 1% in the adult mother. Early neonatal death was found 2% in teenage mother's babies while 1% in adult mother's babies. There was 4% neonatal death in teenage mothers whereas 1% of adult mothers. 90% teenage mother and 95% adult mother delivered alive babies. It was found statistically insignificant (p-value 0.350).

Discussion

WHO defines the period between 10 to 19 years of age as the adolescent period which is synonyms with the term teenage. Pregnancy occurring during this period is called as teenage pregnancy. Physical, psychological and mental status of a girl during this transitional phase is not sufficiently mature to bear a pregnancy. Since teenage pregnancy tends to be more common in the lower socioeconomic groups that are responsible for increased obstetric hazards to both mother and fetus. Moreover pregnancy and delivery in teenage mothers are at higher risk due to poor antenatal care attendance or may be due to poor antenatal services. Lack of health education, religious taboos of child marriage and lack of knowledge about the use of family planning methods account for the increased incidence of teenage pregnancy which is further complicated by poor socioeconomic status, illiteracy, unhygienic living standards, home confinements and lack of transportation in far flung areas.

In our study, the mean age of teenage mother was 18.50 and for the adult mother, it was 22.78 year. This is comparable to other studies. [11,12] Most of the teenage mothers (58.7%) belonged to lower socioeconomic status. It prevents them to take benefit of available facilities. That is why more teenage mothers were associated with pregnancy-related complications. Various studies show similar results. [13-15] In our study majority of teenage mothers belonged to a rural area (71.3%). This indicates that child marriage and early marriages are still prevalent in the rural area. This result is comparable to previous studies. [16] Our study also showed that 70% of teenage mothers were illiterate and thus leading to early marriage, early conception, poor quality of life. Female literacy is correlated strongly with the decline in fertility, development of self-confidence, increasing the age of first sexual intercourse, delaying marriage and use of contraception. This study is comparable to other studies. [17-20] Our study showed that preterm delivery was higher in teenage mothers (25%) as compared to adult mothers (5%). This is comparable to previous studies. [21]

In our study, vaginal delivery was the most common mode of delivery in both teenage and adult mothers. The incidence of LSCS was significantly more in teenage mothers (30%) as compared to the adult mothers

(15%). [22] Instrumental delivery was seen in 3% and 1% in teenage mothers and adult mothers, respectively. This is comparable to the previous studies. [12,21] In our study, there was a higher proportion of low birth weight in teenage mothers (30%) as compared to adult mothers (15%). It was comparable to previous studies. [19,21]

Birth asphyxia is a most common complication and seen in 10% of cases. Meconium Aspiration Syndrome 10%, Neonatal hyperbilirubinemia 5%, neonatal sepsis 3%, fetal anomalies 2% and intestinal perforation seen in 0.7% of cases. A study30 showed the same results. In our study, early neonatal death was seen in 2%, neonatal death was 4%. This is comparable to the previous study. [17]

Conclusion

Appropriate antenatal and postnatal care are fundamental in reducing perinatal and maternal morbidity and mortality. The continuous evaluation of data in different geographical regions will help to improve strategies in the care of pregnant teenagers. Health and sex education is recommended to improve accessibility to family planning and safeguard the reproductive health of teenagers. So, teenage pregnancy should be addressed as high risk and factors responsible for this must be removed. In particular, future research with longitudinal studies is needed to explore changes over time.

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