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A comparative study of sociodemographic profile and fetal outcome in teenage and adult mother

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Abstract

Background: Teenage pregnancy is widely recognized as one of the most complex and serious social, economic and health problems throughout the world. Teenage pregnancy is a high risk pregnancy. Outcome is less satisfactory than that of a pregnancy in general population.

Aim & Objective: 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 20-26 years of an adult mother.

Material and Method: It is a prospective case-control study. 150 cases of teenage pregnancy (13-19 years) were compared with 150 cases of controls (20-26 years) for fetal outcome. After randomization, assessment of Sociodemographic details was done with the help of semi-structured performa.

Statistics: The proposed study was conducted in phased manner observing ethics of voluntary participation and informed consent of the participants were taken.

Results: the mean age of teenage mother and adult mother was 18.25 and 22.78 years respectively. Our study showed that preterm delivery was higher in teenage mothers (20%) as compared to adult mothers (6%). The incidence of LSCS was significantly more in teenage mothers (28.67%) as compared to the adult mothers (15.3%). There was a higher proportion of low birth weight in teenage mothers (31.33%) as compared to adult mothers (14.67%). Birth asphyxia is a most common complication and seen in 11.3% of cases.

Keywords: Teenage mother; Adult Mother: Neonatal complication; Pregnancy.

Introduction

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.

Teenage pregnancy is a social and health problem worldwide with variable prevalence. According to UNICEF, worldwide every 5th child is born to teenage mother.(1) Approximately 13 million birth each year occurs to girls younger than 19 years. In India incidence of teenage pregnancy is varies from 3.2% to 18.6%.(2) According to UNICEF 2011 report, in India adolescent population is 20% of the total population i.e. 243 million. 27% of girls aged 15 to 19 years are married with a birth rate of 45 per 1000 girls in this age group.(3)

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.(4)

Hence the present study aims to find out the incidence and to evaluate the various obstetric and fetal outcome of teenage pregnancy.

Aims and Objective

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 20-26 years of an adult mother.

Material and Methods

It is a prospective case-control study. 150 cases of teenage pregnancy (13-19 years) were compared with 150 cases of controls (20-26 years) for fetal outcome admitted in the Department of Obstetrics and Gynecology, P.B.M and Associated Group of Hospitals, attached to Sardar Patel Medical College, Bikaner tertiary care Hospital, during the period 2013-2014. All the primigravida teenage patients were included in the study until we got 150 cases. For comparative study, we took 150 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

The result showed that the mean age of teenage mother and adult mother was 18.25 and 22.78 years respectively. The maximum number of teenage mother belong to low socioeconomic status (58.7%), housewife (98.67%) by occupation, illiterate (70.7%), Hindu (63.3%) by religion, living in a joint family (62.67%) and belong to the rural background (71.3%). While in adult mother's maximum number of females from middle (58.0%) socioeconomic class, housewife (88.67%) by occupation, educated up to primary level (45.3%), Hindu (53.3%) by religion, living in nuclear family (52.67%) and belong to urban background (56.7%). 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 1)

Table 1: Distribution of sociodemographic profile in both group

Variables	Teenage Mother N=150 (%)	Adult Mother N=150 (%)	X^2 (df)	*p* value
Age in Mean (SD)	18.25(0.948)	22.78(2.030)	(t test) -24.787	0.000
Socioeconomic Status 1. High 2. Middle 3. Low	03 (02.0) 59 (39.3) 88 (58.7)	14 (09.3) 87 (58.0) 49 (32.7)	23.590 (2)	0.000
Occupation 1. House wife 2. Working	148 (98.67) 02 (01.33)	133 (88.67) 17 (11.33)	12.643 (1)	0.000
Education 1. Illiterate 2. Primary 3. Secondary 4. Graduate	106 (70.7) 41 (27.3) 03 (02.0) 00 (0.0)	36 (24.0) 68 (45.3) 35 (23.3) 11 (07.3)	79.142 (3)	0.000
Religion 1. Hindu 2. Muslim	95 (63.3) 55 (36.7)	80 (53.3) 70 (46.7)	3.086 (1)	0.079
Family 1. Nuclear 2. Joint	56 (37.33) 94 (62.67)	79 (52.67) 71 (47.33)	7.125 (1)	0.008
Area 1. Urban 2. Rural	43 (28.7) 107 (71.3)	85 (56.7) 65 (43.3)	24.037 (1)	0.000

The teenage mothers had a higher proportion (20%) of preterm deliveries as compared to the adult mothers (6%) while adult mothers had a higher proportion of post-term pregnancies (10%) as compared to the teenage mothers (1. 3%). 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 2)

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

Period of Gestation (weeks)	Teenage Mothers	Adult Mother	X^2 (df)	*p*-value
	N (%)	N (%)		
Pre-term (32-36)	30 (20.0)	09 (06.0)	21. 511 (2)	0.000
Term (37-40)	118 (78.7)	126 (84.0)		
Post-term (>40)	02 (01.3)	15 (10.0)		

Vaginal delivery was the commonest mode of delivery in both groups, 62% of teenage mothers and 76.7% of adult mothers delivered by vaginal rout. In teenage mothers, cesarean section (LSCS) was done in 28.67%, 6% delivered by assisted breech and 3.3% by forceps. While in adult mothers, LSCS was done in 15.3%, 7.3% delivered by assisted breech and only 0.7% delivered by forceps. Mode of delivery was significant in our study (p-value 0.01). (Table 3)

Table 3: Distribution of Cases According to Mode of Delivery

Mode of Delivery	Teenage Mothers	Adult Mother	X^2 (df)	*p*-value
	N (%)	N (%)		
Assisted Breech	09 (06.0)	11 (07.3)	11.254 (3)	0.010
Forceps	05 (03.3)	01 (0.7)		
LSCS	43 (28.67)	23 (15.3)		
Normal Vaginal	93(62.0)	115 (76.7)		

A maximum number of babies (82.67% & 92.0%) had good Apgar Score (7-10) at 1 minute in both teenage and adult mothers respectively. While 10% babies in teenage mother and 5.33% in adult mother had severe depression (Apgar Score 0-3) on Apgar score at 1 minute. Statistically, it was found significant (p-value 0.046). Similarly, 9.33% babies of a teenage mother and 4.0% babies of the adult mother had also severe depression (Apgar Score 0-3) on Apgar score at 5 minutes. Most of the babies (84.0% & 93.33%) in teenage and adult mother had good Apgar Score at 5 minutes. The difference was statistically significant (p-value 0.039). (Table 4)

Table 4: Distribution of Cases According to Apgar Score at 1 and 5 Minutes

Apgar Score	1 Minute				5 Minute			
	Teenage Mothers		Adult Mothers		Teenage Mothers		Adult Mothers	
	No	%	No	%	No	%	No	%
0-3	15	10.0	08	05.33	14	09.33	06	04.0
4-6	11	07.33	04	02.67	10	06.67	04	02.67
7-10	124	82.67	138	92.0	126	84.0	140	93.33

$\chi^2 = 6.145$ **p-value= 0.046 (1 Minute)**
$\chi^2 = 6.508$ **p-value= 0.039 (5 Minute)**

A Higher proportion of neonatal morbidity was present in teenage mothers (72.67%) as compared to adult mothers (28. 0%). 31.33% babies of the teenage mother had low birth weight (<2.5 kg) as compared to adult mother's babies (14.67%). Intrauterine growth retardation (IUGR) was found in 10.7% babies of the teenage mother while 2.0% babies of the adult mother were IUGR. 11.3% babies of a teenage mother and 4.7% babies of the adult mother had birth asphyxia at the time of delivery. 8.7% and 2.7% babies were affected by meconium aspiration syndrome (MAS) in teenage and adult mother respectively. Neonatal sepsis occurred in 3.3% in babies of a teenage mother and 1.3% in babies of the adult mother. Neonatal hyperbilirubinemia found in 5.3% and 1.3% in babies of teenage and adult mother respectively. A similar incidence of congenital anomalies (1.3%) was found in both groups. Regarding fetal and neonatal complication, the difference was found statistically significant (p-value 0.00). (Table 5)

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

Variables	Teenage Mother N=150 (%)	Adult Mother N=150 (%)	X^2 (df)	*p*-value
IUGR	16 (10.7)	03 (02.0)	62.897 (8)	0.000
Low Birth Weight (<2.5 kg)	47 (31.33)	22 (14.67)		
Birth Asphyxia	17 (11.3)	07 (04.7)		
Neonatal Sepsis	05 (03.3)	02 (01.3)		
Neonatal Hyperbilirubinemia	08 (05.3)	02 (01.3)		
MAS	13 (08.7)	04 (02.7)		
Intestinal Perforation	01 (0.7)	0 (0.0)		
Congenital Anomalies	02 (01.3)	02 (01.3)		
No Complication	41 (27.33)	108 (72.0)		

MAS – Meconium Aspiration Syndrome.

Fresh Still Birth (FSB) were 2.7% in teenage mother and 0.7% in the adult mother. While Macerated Still Birth (MSB) were 2.0% in teenage mother and 1.3% in the adult mother. Early neonatal death was found 2.0% in teenage mother's babies while 0.7% in adult mother's babies. There was 3.3% neonatal death in teenage mothers whereas 1.3% of adult mothers. 90% teenage mother and 96% adult mother delivered alive babies. It was found statistically insignificant (p-value 0.334). (Table 6)

Table 6 Distribution of Fetal and neonatal mortality in both group

Variables	Teenage Mother N=150 (%)	Adult Mother N=150 (%)	X^2 (df)	*p*-value
FSB	04 (02.7)	01 (0.7)	4.576 (4)	0.334
MSB	03 (02.0)	02 (01.3)		
Early Neonatal Death	03 (02.0)	01 (0.7)		
Neonatal Death	05 (03.3)	02 (01.3)		
Normal	135 (90.0)	144 (96.0)		

FSB – Fresh Still Birth, MSB – Macerated Still Birth

Discussion

Teenage is basically a time for growing up and the child is not physically and emotionally mature enough to reproduce. Hence, if the girl is taken out of school at this time and pressurized into marriage, it can cause considerable emotional stress. Furthermore, these young girls, having little or no knowledge of contraception, usually become pregnant soon after marriage which further aggravates the physical and psychological stress.

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 18.25 and for the adult mother, it was 22.78 year. This is comparable to other studies.[5,6] 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.[7-9] 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.[8,10] In our study majority of teenage mothers were Hindu in both teenage mothers and adult mothers due to the predominance of Hindu population in our region. Our study also showed that 70.7% 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.[8,11-14]

Our study showed that preterm delivery was higher in teenage mothers (20%) as compared to adult mothers (6%). This is comparable to previous studies.[15,16] But some study showed that preterm deliveries were less among teenage mothers and term and post-term deliveries were common among the teenage mothers.[17]

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 (28.67%) as compared to the adult mothers (15.3%). Instrumental delivery was seen in 3.3% and 0.7% in teenage mothers and adult mothers, respectively. This is comparable to the previous studies.[6,15]

In our study, there was a higher proportion of low birth weight in teenage mothers (31.33%) as compared to adult mothers (14.67%). It was comparable to previous studies.[13,15,18-20] The cause of prematurity and low birth weight may be poor nutritional status, preeclampsia, and anemia. Some study showed no association between age of mother and the birth weight.[17] In our study, a maximum number of babies had their Apgar score between 7-10 at 5 minutes in both teenage mothers and adult. It is statistically not significant. In our study, neonatal complications were present in 30.64% of teenage mothers as compared to adult mothers (11.33%). Birth asphyxia is a most common complication and seen in 11.3% of cases. Meconium Aspiration Syndrome 08.7%, Neonatal hyperbilirubinemia 5.3%, neonatal sepsis 3.3%, fetal anomalies 1.3% and intestinal perforation seen in 0.7% of cases. A study30 showed the same results. In our study, early neonatal death was seen in 02%, neonatal death was 03.3%. This is comparable to the previous study.[11]

Summary and Conclusion

Prevention of teenage pregnancy and reduced complications of teenage pregnancy can be achieved by following steps as concluded from this study.

1. By improving the overall socioeconomic status of our female population and better nutrition especially during pregnancy.
2. By improving the education of girls as it could play a significant role in decision making of their own life, delaying marriage and building self-confidence.
3. Awareness of the fact that one should not marry before the age of 20 years.
4. Avoidance of pregnancies before the age of 20 years by using contraception (OC Pills and condoms) if married, mainly due to socioeconomic problems,
5. By improving the utilization of family planning services to reduce the rate of teenage pregnancies and minimizing their hazards and to prevent further pregnancies (by postpartum IUCD).
6. Timely and quality antenatal care reduces the incidence of anemia, PIH, IUGR, fetal loss, LBW babies.
7. Neonatal morbidity and mortality can be improved by providing better facilities of the well-equipped neonatal intensive care unit.

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