



The Impact of Teenage Pregnancy on Maternal and Perinatal Outcome

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ABSTRACT

To study the impact of teenage pregnancy on maternal and perinatal outcome. This is a randomized prospective clinical study carried out in the Obstetrics and Gynaecology department, BGS Global Medical College, over a period of one year from January 2015 to December 2015. In study group (Group A) included a total of 200 primigravid teenage mothers (age <20 years) and the control group included 200 primigravid adult mothers (20-30 years of age). The maternal status, labour progress, delivery characteristics and neonatal outcomes were reviewed and analysed. Proportion of mothers in the study group who delivered vaginally was 61.5% compared to 80.5% in the control group. Instrumental delivery rate, emergency LSCS and elective LSCS rates were higher in the study group (teenage pregnancy) compared to the control group. (9.5% Vs 5%, 17% Vs 9.5%, 12% Vs 5% respectively). Anaemia, Premature Rupture of Membranes, Oligohydramnios, Post partum Haemorrhage was found to be higher among teenage mothers when compared to adult mothers. PIH, polyhydramnios were found to be higher in control group than in the study group. In regard to adverse perinatal outcomes, higher risks of intra uterine growth restriction, preterm births, stillbirths, low APGAR scores, NICU admission were higher in the study group compared to the control group. In this study, we found that women with teenage pregnancies were at increased risk for adverse pregnancy outcomes in regard to maternal, foetal and neonatal complications as compared with adult control mothers.

INTRODUCTION

Pregnancies that occur below the age of 20 years are called as teenage pregnancies. Teenage pregnancy is a common public health problem worldwide which is detrimental to the health of mother and child and has long been considered a high-risk situation. Teenage pregnancy continues to be a challenging public health issue around the world, mainly in developing countries.

Worldwide, according to the World Health Organisation [1] about 16 million girls aged 15 to 19 and some 1 million girls under 15 give birth every year—most in low- and middle-income countries. Complications during pregnancy and childbirth are the second cause of death for 15-19 year-old girls globally. Every year, some 3 million girls aged 15 to 19 undergo unsafe abortions. Babies born to adolescent mothers face a substantially higher risk of dying than those born to women aged 20 to 24. [1]

In India, National Health Family Survey-3 (2005-2006) estimates that the overall teenage pregnancies in India are 16%. 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. Despite the legal age for marriage of girls being 18, 47.4% of women in India were child brides, a higher proportion of them being in rural areas.

Teenage pregnancy is dangerous for the mother. Although adolescents aged 10-19 years account for 11% of all births worldwide, they account for 23% of the overall burden of disease (disability-adjusted life years) due to pregnancy and childbirth. [WHO factsheet 2014]. The outcomes are influenced by this biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition and stress [3]. Studies show maternal and foetal mortality and morbidity is directly related to the age of the mother [4]. Teenage pregnancies have shown

association with higher risks of prematurity, low birth weight, preeclampsia and anaemia as compared to adult pregnancies [4, 5, and 6]. 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.[7] Stillbirths and death in the first week of life are 50% higher among babies born to mothers younger than 20 years than among babies born to mothers 20–29 years old. Deaths during the first month of life are 50–100% more frequent if the mother is an adolescent versus older, and the younger the mother, the higher the risk. The rates of preterm birth, low birth weight and asphyxia are higher among the children of adolescents, all of which increase the chance of death and of future health problems for the baby. [WHO factsheet 2014]

MATERIAL AND METHODS

This is a randomized prospective clinical study carried out in the Obstetrics and Gynaecology department, BGS Global Medical College, Bangalore over a period of one year from January 2015 to December 2015. The study group (Group A) included a total of 200 primigravid teenage mothers (age <20 years) and the control group included 200 primigravid adult mothers (20-30years of age). Research was carried out after approval from the institutional ethics committee and informed consent was taken from all participants. All the mothers were approached in the hospital labour room. To minimize the confounding effect of parity on pregnancy outcomes, only primigravidae were included in the study. Only women who had the essential components of antenatal care, i.e. at least three antenatal visits, two doses of Tetanus toxic immunization and who consumed 100 Tablets of IFA were included to minimize the confounding effect of inadequate antenatal care. Women aged 30years or above and women with known conditions that may affect the outcome of foetus (heart disease, syphilis, etc) were excluded. Women who did not give consent were excluded.

Detailed history and examination for each woman was done. Blood samples were sent for blood group and Rhesus group, Haemoglobin levels, blood sugar, blood urea and urine for albumin. Ultrasound was done to ensure viability, singleton pregnancy and gestational age. Intra-partum partograph was performed for each woman. The maternal status, labour progress, delivery characteristics and neonatal outcomes were reviewed and recorded. Labour progress was assessed by monitoring of uterine contractions and progress of cervical dilatation. The foetal heart rate (FHR) was monitored every 15-30 minutes by sonic aid or continuous foetal heart rate monitoring when necessary. Caesarean section, in needed was done for obstetric indications.

All women were followed after delivery for 24hrs looking for any postpartum complications (postpartum haemorrhage, blood transfusion and fever). All the neonates were assessed for weight, Apgar score at one and five minutes, respiratory distress syndrome (RDS), and those who were admitted to neonatal care unit (NCU) were followed for 24 hours.

Data was analysed using MS Excel Sheet and relevant statistical tests were applied. $P < 0.05$ was considered as statistically significant.

RESULTS

In our study group, 89% of the cases belonged to higher teenage group (17-19 years), 8% mothers were in 15-17 years of age and 3% were found in the lower teenage group (13-15 years). The mean age of adolescent mothers was 17years. In the control group majority of the women belonged to the age group of (20 -23 years) and the mean age was 22years. Regarding literacy status, 56% of study group population were literate as compared to 82% in the control group. The number of working mothers was less in the teenage group (27%) as compared to the adult group (39%). Majority of teenage mothers (97%) in the study group and all adult mothers in the control group possessed antenatal card.

Table 1: Comparison in the Mode of Delivery in the Study and Control groups

Mode of Delivery	Study Group (n=200) (Teenage Pregnancy)	Control Group (n=200) (Adult Pregnancy)
Normal Vaginal Delivery	123 (61.5%)	161 (80.5%)
Instrumental Delivery (Vaccum, Forceps)	19 (9.5%)	10 (5%)
Emergency LSCS	34 (17%)	19 (9.5%)
Elective LSCS	24 (12%)	10 (5%)

Proportion of mothers in the study group who delivered vaginally was 61.5% compared to 80.5% in the control group. Instrumental delivery rate, emergency LSCS and elective LSCS rates were higher in the study group (teenage pregnancy) compared to the control group. (9.5% Vs 5%, 17% Vs 9.5%, 12% Vs 5% respectively).

Table 2: Comparison of Obstetric outcomes in the study and control groups

Maternal Complications	Study Group (Teenage Pregnancy)	Control Group (Adult Pregnancy)
Anaemia	46	27
Pre eclampsia	2	5
Oligohydraminos	5	2
Polyhydraminos	3	5
Premature rupture of membranes	14	12
Ante partum Haemorrhage (Abruptio, Placenta Previa)	6	4
Cephalopelvic Disproportion	19	18
Post Partum Haemorrhage	23	11

Anaemia, Premature Rupture of Membranes, Oligohydraminos, Post partum Haemorrhage was found to be higher among teenage mothers when compared to adult mothers. PIH, polyhydraminos were found to be higher in control group than in the study group. Cephalopelvic disproportion was found to be equal in both the groups.

Table 3: Comparison of neonatal outcome in the study and control groups

Intrapartum events	Study Group (n=200) (Teenage Pregnancy)	Control Group (n=200) (Adult Pregnancy)
Normal baby	127 (63.5%)	151 (75.5%)
IUGR	17 (8.5%)	11 (5.5%)
Preterm	23 (11.5%)	14 (7%)
Stillbirth	02 (1%)	00
Low Apgar score(1min & 5min)	31 (15.5%)	24 (12%)
1. NICU admission	24	13
2. NICU outcome	17	11
a)Healthy	06	02
b)Needs further care	01	00
c)Dead		

In regard to adverse perinatal outcomes, higher risks of intra uterine growth restriction, preterm births, stillbirths, low APGAR scores, NICU admission were higher were higher in the study group compared to the control group.

DISCUSSION

This study shows that teenage pregnancy is associated with Anaemia, Premature Rupture of Membranes, Oligohydraminos, Post partum Haemorrhage was found to be higher among teenage mothers when compared to adult mothers. PIH, polyhydraminos were found to be higher in control group than in the study group. Cephalopelvic disproportion was found to be equal in both the groups This result was also shown by the study at Eastern Nepal, where 48% of adolescents suffered from anemia, as well as other studies Anaemia is thought to be more in adolescents because an adolescents' developing body has to compete for nourishment with the foetus, causing rapidly depleting iron and nutrient reserves. Prolonged delivery and instrumental delivery rate was also found higher in teenage pregnancy. Some studies have shown that the risk of caesarean section is increased in teenage pregnancy, while some have shown the opposite. In this study we did not a lower caesarean section rate in teenage pregnancies.

This study also showed that teenage pregnancy is associated with higher preterm delivery and intra uterine growth restricted babies, low Apgar scores, stillbirths and NICU admission rate and this agrees with other studies. The reduction in foetal growth described in some studies has been proposed to result from competition for nutrients between the still growing adolescent mother and her foetus. However, this theory is controversial.

It is often argued that the adverse reproductive outcome in teenage pregnancy is due to the social, economic and behavioural factors rather the biological effect of young age [15–17]. One earlier study has shown that significant differences in the socioeconomic status between teenage mothers and older mothers exist in Nepal as well [18]. The weight of the mother also plays an important role in outcomes such as small for gestational age [19]. We have not taken account of socioeconomic factors or maternal weight which is one of the major limitations of our study.

CONCLUSION

In this study, we found that women with teenage pregnancies were at increased risk for adverse pregnancy outcomes in regard to maternal, foetal and neonatal complications as compared with adult control mothers. By reducing the number of teenage pregnancies and by providing better prenatal, obstetric care and family planning to those

adolescents who become pregnant, maternal and perinatal morbidity and mortality in the developing world can be reduced.

REFERENCES

- [1] Mapanga KG. The perils of adolescent pregnancy. *World Health.* 1997;50:16–18.
- [2] Scholl TO, Hediger ML, Belsky DH. Prenatal care and maternal health during adolescent pregnancy: A review and meta-analysis. *Adolesc Health.* 1994;15:444–456.
- [3] United Nations. Adolescent reproductive behavior: evidence from developing countries. Vol. 2. New York: United Nations; 1989.
- [4] Ganesh Dungal: An Update on Teenage Pregnancy. *The Internet Journal of Gynecology and Obstetrics.* 2005.
- [5] Central Bureau of Statistics. Population census 2001 national report. Kathmandu: National Planning Commission Secretariat and Central Bureau of Statistics-Government of Nepal in collaboration with UNFPA; 2002.
- [6] Family Health Division-Government of Nepal, New ERA and ORC Macro. Nepal demographic and health survey 2001. Maryland, USA: Family Health Division, Government of Nepal, New ERA and ORC Macro; 2002.
- [7] Department of Health Services. Annual report 2061/62 (2004/2005) Kathmandu: Department of Health Services, Government of Nepal; 2006.
- [8] Nepal Ministry of Health, New Era, Macro International Inc. Nepal Family Health Survey. Kathmandu: Nepal Ministry of Health, Department of Health Services, Family Health Division and New Era, Macro International Inc; 1996.
- [9] Babson SG, Benda GI. Growth graphs for the clinical assessment of infants of varying gestational age. *J Pediatr.* 1976;89:814–820.
- [10] Acharya PP, Alpass F. Birth outcomes across ethnic groups of women. *Nepal Health Care Women Int.* 2004 Jan;25(1):40–54.
- [11] Smith GCS, Pell JP. Teenage Pregnancy and risk of adverse perinatal outcomes associated with first and second births: population based retrospective cohort study. *BMJ.* 2001;323:476–81.
- [12] Fraser AM, Brockert JE, Ward RH. Association of young maternal age with adverse reproductive outcomes. *N Engl J Med.* 1995;332:1113–7.
- [13] Friede A, Baldwin W, Rhodes PH, et al. Young Maternal age and infant mortality: the role of low birth weight. *Public Health Rep.* 1987;102:192–9.
- [14] Brown HL, Fan YD, Gonsoulin WJ. Obstetric complications in young teenagers. *South Med J.* 1991;84:46–48.
- [15] Hollingsworth DR, Felice M. Teenage Pregnancy: A multiracial sociologic problem. *Am J Obstet Gynecol.* 1986;155:741–6.
- [16] McAnarney ER. Young Maternal age and adverse neonatal outcome. *Am J Dis Child.* 1987;141:1053–9.
- [17] Reichman NE, Pagnini DL. Maternal age and birth outcomes: Data from New Jersey. *Fam Plann Perspect.* 1997;29:268–72. 295.
- [18] Sharma AK, Verma K, Khatri S, Kannan AT. Pregnancy in adolescents: A Study of Risks and Outcome in Eastern Nepal. *Indian Pediatrics.* 2001;38:1405–1409.
- [19] Ojha N, Malla DS. Low birth weight at term: relationship with maternal anthropometry. *J Nepal Med Assoc.* 2007 Apr–Jun;46(166):52–6.
- [20] Lao TT, Ho LF. Obstetric outcome of teenage pregnancies. *Human Reprod.* 1998;13:3228–32.
- [21] Olausson PM, Cnattingius S, Goldenberg RL. Determinants of poor pregnancy outcomes among teenagers in Sweden. *Obstet Gynecol.* 1997;89:451–7.
- [22] Ketterlinus RD, Henderson SH, Lamb ME. Maternal age, sociodemographics, perinatal health and behavior: influences on neonatal risk status. *J Adolesc Health Care.* 1990;11:42331.
- [23] Jolly, et al. Obstetric risks of pregnancy in women less than 18 years old. *Obstet Gynecol.* 2000;96(6):962–6.
- [24] Lao TT, Ho LF. The Obstetric implications of teenage pregnancy. *Human Reprod.* 1997;12(10):2303–5.
- [25] Bacci A, Manhica GM, Machungo F, et al. Outcome of teenage pregnancy in Maputo. *Int J Gynaecol Obstet.* 1993;40:19–23.