

A CLINICAL STUDY OF OBSTETRICAL AND PERINATAL OUTCOME IN TEENAGE PREGNANCIES IN A TERTIARY CARE HOSPITAL, MADHUBANI, BIHAR

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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. **Materials and Methods:** This was randomized prospective study that was carried out in the Obstetrics and Gynaecology department at Madhubani Medical College, Madhubani, Bihar. This was hospital-based study carried out over 12 months from July 2023 to June 2023 in the department of Obstetrics and Gynaecology. Total 300 pregnant women admitted in third trimester in labor ward were enrolled in the study. Ethics committee approval was obtained for this study. **Result:** In our study group, 90% of the cases belonged to higher teenage group (17-19 years), 8% mothers were in 15-17 years of age and 2% were found in the lower teenage group (13-15 years). The mean age of adolescent mothers was 17 years. **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.

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] Because of the adverse perinatal and maternal

outcomes in teenage pregnancy, physicians must pay more attention to and raise their awareness of the management of teenage pregnancy. Teenage pregnancy is considered to be a high-risk condition that leads to psychological problems and adverse perinatal and obstetric outcomes.^[2,3] These conditions are not easily solved because they are the result of poor health habit and lack of nutrition. 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.^[4] Studies show maternal and foetal mortality and morbidity is directly related to the age of the mother.^[5] Teenage pregnancies have shown association with higher risks of prematurity, low birth weight, preeclampsia and anaemia as compared to adult pregnancies.^[6,7,8] 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 delay.^[9,10,11] 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.^[12,13] 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].

MATERIALS AND METHODS

This was randomized prospective study that was carried out in the Obstetrics and Gynaecology department at Madhubani Medical College, Madhubani, Bihar. This was hospital-based study carried out over 12 months from July 2023 to June 2023 in the department of Obstetrics and Gynaecology. Total 300 pregnant women admitted in third trimester in labor ward were enrolled in the study. Ethics committee approval was obtained for this study.

Inclusion Criteria

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.

Exclusion Criteria

Women who did not give consent.

Women aged above 30 years.

Women with known condition that may affect the outcome of foetus, pregnant women with active Thyroid disease like Thyroid disease like thyroiditis or Grave's disease, preexisting Calcium or

Parathyroid condition or who require diuretic or Cardiac medication therapy including Calcium channel blocker.

Data Collection

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, if 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.

RESULTS

In this study there are two group i.e. study group and control group and each group included 300 pregnant women respectively. The study group included total 300 primigravid teenage and their age were less than 20 years and control group included 300 primigravid adult mothers and their age were in between 20 -30 years.

In our study group, 90% of the cases belonged to higher teenage group (17-19 years), 8% mothers were in 15-17 years of age and 2% were found in the lower teenage group (13-15 years). The mean age of adolescent mothers was 17 years. In the control group majority of the women belonged to the age group of (20-23 years) and the mean age was 22 years. Regarding literacy status of secondary education, 40 % of study group population were literate as compared to 53.33% in the control group. The number of working mothers was higher in the teenage group (16.66%) as compared to the adult group (14.66%). Majority of teenage mothers (97%) in the study group and all adult mothers in the control group possessed antenatal card.

Table 1: Demographic factors.

Variables	Total (n=600)	Study group (n=300)	Control group (n=300)	P-value
Age <20 years	300(50%)	300(100%)	--	0.705(NS)
Age >20years	300(50%)	--	300(100%)	
Education				0.769(NS)
Primary	340(56.66%)	180(60%)	140(46.66%)	
Secondary	260(43.33%)	120(40%)	160(53.33%)	
House wife	500(83.33%)	250(83.33%)	256(85.33%)	0.674(NS)
Working	100(16.66%)	50(16.66%)	44(14.66%)	

* (S)=Significant

* (NS)=Not Significant

Table 2: Comparison in the Mode of Delivery in the Study and Control groups

Mode of Delivery	Study group (n=300)	Control group (n=300)
Normal Vaginal Delivery	184(61.33%)	240(80%)
Instrumental Delivery (Vaccum, Forceps)	28(9.33%)	16(5.33%)
Emergency LSCS	50(16.66%)	28(9.33%)
Elective LSCS	38(12.66%)	16(5.33%)
Total	300(100%)	300(100%)

Proportion of mothers in the study group who delivered vaginally was 92(61.33%) compared to 120 (80%) in the control group. Instrumental delivery rate was 14(9.33%) and in the control group was 8 (5.33%), emergency LSCS rate in the study group was 25(16.66%) and in the control group was 15(9.33%), elective rates in the study group was 19(12.66%) and in the control group was 8(5.33%).

Table 3: Comparison of Obstetric outcomes in the study and control groups

Maternal Complications	Study Group (Teenage Pregnancy)	Control Group (Adult Pregnancy)
Anaemia	36	28
Pre-eclampsia	1	3
Oligohydraminos	3	1
Polyhydraminos	2	5
Premature rupture of membranes	12	10
Ante partum Haemorrhage (Abrupton, Placenta Previa)	6	4
Cephalopelvic Disproportion	11	9
Post-Partum Haemorrhage	14	12

Anaemia, Premature Rupture of Membranes, Oligohydraminos, Postpartum 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 4: Comparison of neonatal outcome in the study and control groups

Intrapartum events	Study Group (n=300) (Teenage Pregnancy)	Control Group (n=300) (Adult Pregnancy)
Normal baby	186(63%)	224(74.66%)
IUGR	28(9.33%)	16(5.33%)
Preterm	38(12.66%)	22(7.33%)
Stillbirth	6(2%)	00(0.00%)
Low Apgar score	42(14%)	38(12.66%)
Total	300(100%)	300(100%)

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 ---- college-----, where 46% 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.

[Table 1] shows the demographic factors. Regarding literacy status of secondary education, 40 % of study group population were literate as compared to 53.33% in the control group. The number of working

mothers was higher in the teenage group (16.66%) as compared to the adult group (14.66%).

[Table 2] Shows the comparison in the Mode of Delivery in the Study and Control groups. Proportion of mothers in the study group who delivered vaginally was 184(61.33%) compared to 240 (80%) in the control group. Instrumental delivery rate was 28(9.33%) and in the control group was 16 (5.33%), emergency LSCS rate in the study group was 50(16.66%) and in the control group was 30(9.33%), elective rates in the study group was 38(12.66%) and in the control group was 16(5.33%). Instrumental delivery, emergency LSCS and elective LSCS rates were higher in the study group (teenage pregnancy) compared to the control group.

[Table 3] Shows comparison of Obstetric outcomes in the study and control groups.

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.^[14,15,16]

[Table 4] Shows comparison of neonatal outcome in the study and control groups. In intrapartum events the rate of normal baby control group was in study group was 186(63%) and in the 224(74.66%), IUGR rate in study group was 28(9.33%) and in the control group was 16(5.33%), preterm rate in the study group was 38 (12.66%) and in the control group was 22(7.33%), low apgar score in the study group was 42(14%) and in the control group was 38(12.66%). 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.

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.^[17,18,19] One earlier study has shown that significant differences in the socioeconomic status between teenage mothers and older mothers exist in Nepal as well.^[20,21,22] The weight of the mother also plays an important role in outcomes such as small for gestational age.^[23,24] 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

- Mapanga KG. The perils of adolescent pregnancy. *World Health*. 1997;50:16–18.
- 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.
- United Nations. Adolescent reproductive behavior: evidence from developing countries. Vol. 2. New York: United Nations; 1989.
- Ganesh Dungal: An Update on Teenage Pregnancy. *The Internet Journal of Gynecology and Obstetrics*. 2005.
- 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.
- 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.
- Department of Health Services. Annual report 2061/62 (2004/2005) Kathmandu: Department of Health Services, Government of Nepal; 2006.
- 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.
- Babson SG, Benda GI. Growth graphs for the clinical assessment of infants of varying gestational age. *J Pediatr*. 1976;89:814–820.
- Acharya PP, Alpess F. Birth outcomes across ethnic groups of women. *Nepal Health Care Women Int*. 2004 Jan;25(1):40–54.
- 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.
- Fraser AM, Brockert JE, Ward RH. Association of young maternal age with adverse reproductive outcomes. *N Engl J Med*. 1995;332:1113–7.
- 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.
- Brown HL, Fan YD, Gonsoulin WJ. Obstetric complications in young teenagers. *South Med J*. 1991;84:46–48.
- Hollingsworth DR, Felice M. Teenage Pregnancy: A multiracial sociologic problem. *Am J Obstet Gynecol*. 1986;155:741–6.
- McAnarney ER. Young Maternal age and adverse neonatal outcome. *Am J Dis Child*. 1987;141:1053–9.
- Reichman NE, Pagnini DL. Maternal age and birth outcomes: Data from New Jersey. *Fam Plann Perspect*. 1997;29:268–72. 295.
- 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.
- Ojha N, Malla DS. Low birth weight at term: relationship with maternal anthropometry. *J Nepal Med Assoc*. 2007 Apr–Jun;46(166):52–6.
- Lao TT, Ho LF. Obstetric outcome of teenage pregnancies. *Human Reprod*. 1998;13:3228–32.
- 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.
- Ketterlinus RD, Henderson SH, Lamb ME. Maternal age, sociodemographics, perinatal health and behavior: influences on neonatal risk status. *J Adolesc Health Care*. 2021;11:42331.
- Jolly, et al. Obstetric risks of pregnancy in women less than 18 years old. *Obstet Gynecol*. 2022;96(6):962–6.
- 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*. 2023;40:19–23.