

Maternal and Perinatal Outcome in Adolescent Pregnancies as Compared to Adult Pregnancies

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ABSTRACT

Introduction: Adolescence is the period between the ages of 10-19 years that encompasses time from onset of puberty to full legal ages (WHO 2002).

Objective: The objective of the study was to explore effect of maternal ages on fetomaternal and perinatal outcome.

Methods: This is a hospital based retrospective case-control study conducted over 1 year (March 2017 to February 2018) in the department of Obstetrics and Gynaecology in Tribhuvan University Teaching Hospital to study the antenatal complications and perinatal outcome in adolescent pregnant women as compared to pregnant women of age 20-30 years.

Results: During this study period, there were 4980 deliveries out of which adolescent pregnancy were 140(2.8%). Anemia was significantly more in teenage group (16.42% vs 8.57%, $p=0.047$). Incidence of hypertensive disorders was 5.71% and 1.42% ($p=0.05$) in teenage and adult group. Proportion of babies with intrauterine growth restriction was 5.71% in teenage and 1.42% ($p=0.05$) in adult group. Low birth weight babies were significantly higher in teenage group than adult group 16.42% vs 8.57% ($p=0.047$). NNU admission and apgar score were significantly higher in teenage group 5.71% vs 1.42%.

Conclusion: Teenage pregnancies are associated with adverse obstetric and perinatal outcome.

Keywords: Adolescent; Outcome; Pregnancy.

Submitted: May 27, 2021

Accepted: June 23, 2021

Published: June 28, 2021

INTRODUCTION

Adolescence is the period between the ages of 10-19 years that encompasses time from onset of puberty to full legal ages (WHO 2002).¹ Every year an estimated 21 million girls aged 15 to 19 years and 2 million girls aged under 15 years become pregnant in developing countries.^{2,3} In Nepal adolescent aged 10-19 years comprise of 6.38 million of the total population of 28.5 millions.⁴ In Nepal, the legal minimum age of marriage for women is 20 years.⁵ Nepal Demographic and Health Survey (NDHS) 2016 reported that 17% of teenage girls had already given birth or were pregnant with their first child.⁶ Inadequate antenatal care, lack

of education and poor socioeconomic status also affect the outcome.^{7,8,9} Adolescent pregnancies are also at increased risk for neonatal complications as premature, low birth weight, IUGR, still birth.¹⁰ Harrison et al reported increased rate of maternal mortality in young pregnant girls (27/1000) compared to (4/1000) in women aged 20- 24 years.¹¹ It has been projected that incidence of adolescent pregnancy will rise by 2030 due to early engagement of adolescents in sexual life and reluctance and ignorance of contraception.¹²

Citation: Khaniya B. Maternal and perinatal outcome in adolescent pregnancies as compared to adult pregnancies. Nepal J Health Sci. 2021 Jan-Jun;1(1): 43-47

There is a need to study the effect of maternal age in determining obstetrics outcome to reduce maternal morbidity and mortality in our settings. This study will help us to recommend the optimal age of child-birth to reduce maternal and perinatal morbidity and mortality.

METHODS

This is a hospital based retrospective case-control study conducted over 1 year, from March 2017 to February 2018 in the department of Obstetrics and Gynecology in Tribhuvan University Teaching Hospital. The study group comprises of all booked and unbooked adolescent pregnant ladies delivered after 28 weeks of pregnancy to the hospital during study period. The control group comprised of matched pregnant ladies of 20-30 years delivered in the same hospital in same period having the next entry in parturition register following a teenage pregnancy was selected. Pregnant women with less than 28 weeks of pregnancy, skeletal deformity and pelvic fracture were excluded from the study.

Permission for the study and ethical approval was obtained from institutional review committee (IRC) of Tribhuvan University, Institute of medicine (IOM) Ref No 4041(6-11) E2 /076/077. The data was obtained from the confinement book of the labour room and record section of the hospital. The maternal complications like anaemia, hypertensive disorder of pregnancy, intrauterine growth restriction, oligohydramnios,

diabetes in pregnancy and mode of delivery and perinatal outcome like low birth weight, NNU admission, apgar score < 7 were analysed between adolescent pregnant women and pregnant women between 20-30 years of age. Anemia was defined as a hemoglobin level below 11 gm% in the last trimester of pregnancy. Hypertensive disorder of pregnancy was defined as BP > 140/90 mm hg on the occasions apart after 20 weeks of pregnancy. Oligohydramnios was defined as reduced amniotic fluid (amniotic fluid index of 5 cm and less). Intrauterine growth restriction was defined as deviation and reduction in expected fetal growth < 10th percentile for gestational age. Preterm labour was defined as defined as delivery before 37 weeks of gestation. Low birth weight was defined as baby weight less than 2500gm.

All collected data were recorded and entered master chart. Data analysis was done using SPSS software. Statistical tests carried out for testing the significance were the chi-square test and exact fisher test. Value of P < 0.05 was taken to indicate significance.

RESULTS

The total number of deliveries were 4980 during the study period out of which teenage pregnancy were 140 (2.81%). Most of teenage pregnant women were of 18-19 years of age (87.85%). The minimum age of adolescent pregnancy was 15. Adolescent pregnant women were mostly primigravidas (85.71%).

TABLE 1: Distribution of pregnant women according to antenatal complications

Antenatal Complications	Adolescent Pregnant women n(%)	Pregnant women of 20-30 yrs n (%)	P value
Anemia	23 (16.42%)	12 (8.57%)	0.02 (S)
Hypertensive disorder of pregnancy(HDP)	8(5.71%)	2(1.42%)	0.05
Intrauterine growth restriction(IUGR)	8(5.71%)	2(1.42%)	0.05
Oligohydramnios	5(3.57%)	2(1.42%)	0.44
Malpresentation	5(3.57%)	2(1.42%)	0.44
Diabetes	1(0.71%)	2(1.42%)	1.0

Anaemia was significantly higher in teenage pregnant women than pregnant women of 20-30 years. HDP and IUGR were found high among adolescent pregnant women than adult pregnant women though not significant. Oligohydramnios and malpresentation were also more among adolescent pregnancy. Diabetes was found more in adult pregnant women than adolescent pregnancy though not significant. (Table 1)

TABLE 2: Distribution of pregnant women according to mode of delivery (n=140)

Mode of delivery	Adolescent pregnant women	Pregnant women of 20-30 yrs.	P value
	n (%)	n (%)	
Preterm delivery	18(12.85%)	7(5%)	0.021 (S)
Vaginal delivery	71(50.71%)	105(77.85%)	0.000 (S)
Instrumental delivery	4(2.85%)	2(1.42%)	0.684
Cesarean section	47(33.57%)	22(15.71%)	0.001 (S)

Preterm delivery, cesarean section was found significantly higher in adolescent pregnant women than adult pregnant women. Vaginal delivery was significantly higher in adult pregnant women than adolescent pregnant women. (Table 2)

TABLE 3: Distribution of pregnant women according to perinatal complications

Perinatal complication	Adolescent pregnant women	Pregnant women of 20-30 yrs	P value
	n (%)	n (%)	
Low birth weight (LBW)	23(16.42%)	12(8.57%)	0.047 (S)
Apgar score at 5 min (<7)	8(5.71%)	2(1.42%)	0.053
Neonatal unit admission	8(5.71%)	2(1.42%)	0.053
Still birth	4(2.85%)	2(1.42%)	0.684

Low birth weight (LBW) baby were found significantly higher in adolescent pregnant women than adult pregnant women. (Table 3)

DISCUSSION

Adolescent pregnancy continues to be a major public health problem in Nepal. In our study we got incidence of teenage pregnancy as 2.81% which was comparable to incidence noted by Rajoriya et al. 2.5%¹³ and Ambedkar et al. 3.9%.¹⁴ In our study we found 16.42% teenagers were anemic which was lower than other study being 22-75%.¹⁵⁻¹⁶ Incidence of anemia was low in our study may be due to the study site being referral tertiary hospital of capital city. We found 5.7% of teenage mothers had hypertensive disorder of pregnancy in our study while other studies found incidence of 14.87%.¹⁷ Intrauterine growth retardation was found

higher in teenage mothers (5.71%) than adult population (1.42%) which was similar to study carried out by kyastha et al.¹⁸ The probable cause of IUGR and other foetal complications in teenage pregnancy was due to more cases of anaemia and hypertensive disorder of pregnancy. In our study oligohydramnios was found more in adolescent mother than adult mother (3.57% vs 1.42%) but it was found same in both group in study carried out by Kovavisarach et al¹⁹ (0.6% vs 0.6%). 12.85% of adolescent mothers delivered preterm which was similar in the findings of Rajoria M et al 13(13%), Mamatha et al (12.5%).²⁰ This could be due to high incidence of anemia and preeclampsia in

teenage pregnant women. Teenage mother underwent significant higher lower segment cesarean section as compared to adult mother in our study (33.57% vs 15.71%) which was similar to study carried out by Nair A et al.¹⁷ As the teenagers are still in the growing stage, inadequate growth of pelvic bone could be the more cesarean section due to cephalopelvic disproportion. Vaginal delivery was significantly higher in adult pregnant women (77.85%) than adolescent mother (50.71%) in our study which was similar to study carried by Shravage JC et al (51.9% and 21.4% respectively).²¹ The probable reason for this may be due to immaturity and underdeveloped bony pelvis in teenagers.

We found 16.42% of babies born to teenagers were low birth weight but other study showed much higher incidence 29.49%.¹⁷ Poor antenatal care, anaemia, HDP, and preterm labour could be the cause of low birth weight babies in teenage pregnancy. Apgar score <7

in 5 min and higher neonatal ward admission were higher in teenage mother than adult mother in our study which was similar to other study.¹⁹ Stillbirth was found higher in teenage group in our study though not significant.

CONCLUSION

From the present study, it is concluded that teenage mothers had significant number of complications in pregnancy including leading cause being anaemia, HDP, and preterm labour compared to pregnant women in 20s. Maternal morbidity was also more due to increased operative interference. Perinatal morbidity was more due to high neonatal admission in teenage women.

Conflict of interest: None

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