

Maternal and Fetal Outcomes of Adolescent Pregnancies at Patan Hospital

RC L¹, Baral R², Shrestha R¹, Gurung P¹, Lama S¹.

¹Department of Obstetrics and Gynaecology, ²Department of Pathology, Patan Academy of Health Sciences, Lalitpur, Nepal.

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Aims: This study aims to review obstetric and neonatal outcome and risk factors in adolescent pregnant women and to compare perinatal outcomes with the adult group.

Methods: This is a retrospective comparative study in between primiparous pregnant teenager women aged 15-19 years and 20-24 years from April 2012 to April 2013 in Patan Hospital, Lalitpur, Nepal. The data was retrieved from the hospital records. Frequency of prenatal care, perinatal outcome (newborn's weight and gestational age at delivery), mode of delivery and maternal complications if any were recorded.

Results: This is a retrospective comparative study in between primiparous pregnant teenager women aged 15-19 years and 20-24 years from April 2012 to April 2013 in Patan Hospital, Lalitpur, Nepal. The data was retrieved from the hospital records. Frequency of prenatal care, perinatal outcome (newborn's weight and gestational age at delivery), mode of delivery and maternal complications, if any were recorded.

Conclusions: There was significant association of neonatal complications like still birth, intra uterine fetal death, fetal distress, and meconium aspiration with the adolescent pregnancy. There was no significant association between neonatal death and age of mother.

Keywords: adolescent pregnancy; preterm pregnancy; teenagers; young mother.

INTRODUCTION

Adolescence means a transitional stage of physical and mental human development, involving biological, social and psychological changes, occurs between 10-19 years of age as the World Health Organization (WHO) suggested. Pregnancy in this transitional stage is a common public health problem and social phenomenon with medical consequences worldwide. Adolescent pregnancy has been a problem with adverse obstetric and neonatal outcome being influenced by biological immaturity, unintended pregnancies, inadequate perinatal care, poor maternal nutrition and stress. Socioeconomic, cultural, geographic and racial factors are also associated with teenage pregnancy and poor pregnancy outcome.¹⁻³

Rapid population growth rate is one of the major problems in Nepal. Early marriage and childbearing

plays an important role in the rapid population growth. More than one-third of the girls are married before the age of 19 in Nepal.⁴ Risk of death following pregnancy is twice as great for women between 15 and 19 years than those between the ages of 20 and 24.⁵

Adolescent pregnancies are at increased risk for neonatal complications as prematurity, low birth weight, intrauterine growth restriction (IUGR), neonatal mortality and still birth.⁶⁻²⁴ The maternal complications like pregnancy induced hypertension (PIH), preeclampsia, and anemia in pregnancy, perineal tear and episiotomy are also common among adolescents.^{9,10,12} However, cesarean section (CS), instrumental delivery and premature rupture of membrane, antepartum hemorrhage (APH) and postdated were not found significantly associated with adolescents pregnancy.^{10, 13, 14, 18, 24, 25}

METHODS

This was a retrospective study undertaken at Patan Hospital, Lalitpur from April 2011 to April 2012. Ethical approval was taken from the Institutional Review Committee (IRC) of Patan Academy of Health Sciences (PAHS). The charts were collected

CORRESPONDENCE

Dr. Laxmi RC
Assistant Professor
Department of Obstetrics and Gynecology, Patan Academy of Health Sciences, Lalitpur, Nepal
Phone: 9851085326
Email: dr_lax50@hotmail.com

from medical record section and analyzed. Total sample size was 2451. All the primigravida mothers of 15-19 years (n=351) and 20-24 years (n=2100) were included in the study. Exclusion criteria included incomplete patient details, multigravida and twin delivery. Chi-square test and relative risk (RR) for subgroups of this study population was examined using the SPSS version 16.0.

RESULTS

Neonates with normal birth weight (>2.5-4 kg) was seen in 70% (n=248) of the adolescent age group and 85% (n=1797) of adult age group. However, neonates with low birth weight (<2.5 kg) was significantly higher in the adolescent age group with 29% (n=102) than the adult age group with only 13% (n=287).

There was no significant difference in the gestational age at birth amongst both the age group with p-value of 0.756.

Significant association of neonatal complications like still birth, IUFD, fetal distress and meconium aspiration is seen to be associated with the adolescent pregnancy with chi-square test (df 1) p-value being

0.000 which is less than 0.05. There is no significant association of neonatal death and age of mother having p-value 0.347 which is more than 0.05.

The table 1 shows that with the adolescent pregnancy there are increased maternal complications. The occurrence of hypertensive (HTN) disorder is 5.6% among the adolescent pregnancy as compared to young age mothers being 1.2% which is statistically significant with Chi square test p-value of 0.000. The occurrence of premature rupture of membrane (PROM) and Preterm premature rupture of membrane (PPROM) also show statistically significant association (Chi-square test p-value 0.000) on mother's age having 18% and 2% respectively in adolescent pregnancy. The occurrence of postpartum hemorrhage (PPH) is statistically significant (Chi-square test p-value 0.000) among the adolescent mothers (11.3%) than the young mothers (0.3%).

The young mother age group has no complication (91.2%) as compared to the adolescent mothers (57.2%) which is statistically significant (Chi-square test p-value 0.000).

Table 1: Age of mother and maternal complication at birth

Maternal complication	Age of Mother			p-values (Chi-square Test, df 1)
	15-19 years n=351 (%)	20-24 years n=2100 (%)	Total n=2451 (%)	
Hypertensive disorder	20(5.6)	27(1.2)	47(2)	0.000
Premature rupture of membrane (PROM)	63(18)	62(3)	125(5)	0.000
Preterm premature rupture of membrane (PPROM)	7(2)	9(0.4)	16(0.6)	0.000
Antepartum hemorrhage (APH)	-	3(0.1)	3(0.1)	-
Postpartum hemorrhage (PPH) +check curettage	40(11.3)	66(0.3)	106(4.3)	0.000
Others	20(5.6)	38(1.8)	58(2.3)	0.000
None	201(57.2)	1895(90.2)	2096(85.5)	0.000
Total	351	2100	2451	

DISCUSSION

In this study, we compared the outcome of teenage pregnancy (15-19 years) to a group of young pregnant women (20-24 years). It revealed that 29% of low birth weight was found to the mothers of 15-19 years age group. Similar findings were present in different studies where low birth weight was the important determinants of child mortality and the outcome of adolescent pregnancy.⁶⁻²⁴

Unlike other studies^{8, 20, 30} this study revealed no association between adolescent pregnancies and preterm birth. The rate of cesarean section was found fewer in adolescent mothers. One possible explanation

was the higher incidence of low birth weight infants in adolescent pregnancies, which could be associated with higher chance of vaginal delivery. Instrumental deliveries were found almost equal in both the groups in this study. Postpartum hemorrhage (PPH) was found higher among teenage mothers in this study, whereas it was found significantly higher in 20 or more year age group.¹³ Post term birth was found higher in 20 or more year age group in this study.

Among the neonatal complication, still birth and intrauterine fetal death, neonatal death, fetal distress and meconium aspiration of newborn of adolescents had greater neonatal complication than from the

young mothers in our study and similar study found neonatal mortality and still birth.⁶⁻²⁴ The maternal complications like hypertensive disorder, prelabour rupture of membrane, preterm premature rupture of membrane, postpartum hemorrhage in pregnancy, perineal tear and episiotomy were also common among adolescents^{9,10,12}. However, cesarean section (CS), instrumental delivery, premature rupture of membrane and postdated were not found significantly associated with adolescents pregnancy.^{10, 13, 14, 18, 24, 25} but in our study prelabour rupture of membrane was higher in adolescent group.

CONCLUSIONS:

An adverse outcome of adolescent pregnancy is attributed not only to lower maternal age but also to their relatively disadvantaged socioeconomic background, quality of prenatal visits and their family supports. Strict enforcement of laws prohibiting teenage marriage in a country like Nepal is needed to prevent from adolescent pregnancy. For those who are already pregnant at teenage, quality maternity services should be provided. In order to reduce occurrence of adolescent childbearing and its consequences, education/information may provide benefit to those female adolescents with inconsistent pregnancy intentions.

REFERENCES

1. Oboro VO, Tabowei TO, Jemikalajah JJ, Bosah JO, Agu D. Pregnancy outcomes among nulliparous teenagers in suburban Nigeria. *J Obstet Gynaecol*. 2003;23: 166-9.
2. Du Plessis HM, Bell R, Richards T. Adolescent pregnancy: understanding the impact of age and race outcomes. *J Adolesc Health*. 1997;20: 187-97.
3. Chang SC, O'Brien KO, Nathanson MS, Mancini J, Witter FR. Characteristics and risk factors for adverse birth outcomes in pregnant black adolescents. *J Pediatr*. 2003;143: 250-257.
4. Ministry of Health and Population, New era and Macro International Inc. Nepal Demographic and Health Survey 2006. Kathmandu, Nepal. 2007.
5. Discussion papers on adolescence issues in adolescent health and development. Department of Reproductive Health and Research. WHO library cataloging in publication data, WHO, Geneva. 2004.
6. Canbaz S, Sunter AT, Cetinoglu CE, Peksen Y. Obstetric outcomes of adolescent pregnancies in Turkey. *Adv Ther*. 2005; 22: 636-41.
7. Chen XK, Wen SW, Fleming N, Demissie K, Rhoads GG, Walker K. Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study. *Int J Epidemiol*. 2007; 36: 368-73.
8. Smith GC, Pell JP. Teenage pregnancy and risk of adverse perinatal outcomes associated with first and second births: population based retrospective cohort study. *BMJ*. 2001;323: 1-5.
9. Malla K. Adolescent pregnancy: associated risk factors with maternal and fetal outcome at Maternity Hospital [PhD thesis]. Institute of Medicine. Maharajgunj Nursing Campus, Kathmandu. 2059 B.S.
10. Kongnyuy EJ, Nana PN, Fomulu N, Wiysonge SC, Kouam L, Doh AS. Adverse perinatal outcomes of adolescent pregnancies in Cameroon. *Matern Child Health J*. 2008;12: 149-54.
11. Keskinoglu P, Bilgic N, Picakciefe M, Giray H, Karakus N, Gunay T. Perinatal outcomes and risk factors of Turkish adolescent mothers. *J Pediatr Adolesc Gynecol*. 2007;20: 19-24.
12. Kumar A, Singh T, Basu S, Pandey S, Bhargava V. Outcome of teenage pregnancy. *Indian J Pediatr*. 2007;74: 927-31.
13. Trivedi SS, Pasrija S. Teenage pregnancies and their obstetric outcomes. *Trop Doct*. 2007;37: 85-8.
14. Nasreen SA, Haque MM, Hasan MR. Pregnancy outcome in adolescent and adult - a case comparison study. *Mymensingh Med J*. 2006; 15: 15-21.
15. Malamitsi-Puchner A, Boutsikou T. Adolescent pregnancy and perinatal outcome. *Pediatr Endocrinol Rev*. 2006; 3(Suppl 1): 170-1.
16. Al-Ramahi M, Saleh S. Outcome of adolescent pregnancy at a university hospital in Jordan. *Arch Gynecol Obstet*. 2006;273: 207-10.
17. Mukhopadhyay P, Chaudhuri RN, Paul B. Hospital-based perinatal outcomes and complications in teenage pregnancy in India. *J Health Popul Nutr*. 2010;28: 494-500.
18. Briggs MM, Hopman WM, Jamieson MA. Comparing pregnancy in adolescents and adults: obstetric outcomes and prevalence of anemia. *J Obstet Gynaecol Can*. 2007;29: 546-55.
19. Haldre K, Rahu K, Karro H, Rahu M. Is a poor pregnancy outcome related to young maternal age? A study of teenagers in Estonia during the period of major socio-economic changes (from 1992-2002). *Eur J Obstet Gynecol Reprod Biol*. 2007;131: 41-51.
20. Fraser AM, Brockert JE, Ward RH. Association of young maternal age with adverse reproductive outcomes. *N Engl J Med*. 1999;332: 1113-7.
21. Mehra S, Agrawal D. Adolescent pregnancy outcomes in India. *Indian Pediatr*. 2004; 41:137-45.
22. Connolly G, Kennelly S, Conroy R, Byrne P. Teenage pregnancy in the Rotunda hospital. *Ir Med J*. 1998; 91: 209-12.
23. Magadi M, Agwanda A, Obare F, Taffa N. Size of newborn and caesarian section deliveries among teenagers in Sub-Saharan Africa: evidence from DHS. *J Biosoc Sci*. 2007; 39: 175-87.
24. Zeck W, Walcher W, Tamussino K, Lang U. Adolescent primiparas: changes in obstetrical risk between 1983-1987 and 1999-2005. 2008; 34: 195-8.
25. Simoes VMF, Silva AAM, Bettiol H, Lamy-Filho F, Tonial SR, Mochel, EG. Characteristics of adolescent pregnancy, Brazil. *Rev Saude Publica*. 2003;37: 559-65. Portuguese.