Thai Journal of Obstetrics and Gynaecology
September 1998, Vol. 10, pp. 157-160

OBSTETRICS

Comparative Obstetric Outcomes between Adolescent Pregnancies and Pregnancies in women Aged 20-30 years.

Aranya Phoungpaka M.Sc,*
Pratak O-Prasertsawat MD,**
Surasak Taneepanichskul MD,***
Wongdyan Pandii Dr.P.H.****

* *Department of Obstetrics and Gynaecology, Phra Pok Klao Hospital, Chantaburi, Thailand*
** *Department of Obstetrics and Gynaecology, Faculty of Medicine, Ramathibodi Hospital, Bangkok 10400*
*** *Department of Obstetrics and Gynaecology, Faculty of Medicine, Chulalongkorn Hospital, Bangkok 10330*
**** *Department of Pathology, Faculty of Public Health, Mahidol University, Bangkok 10400, Thailand*

ABSTRACT

Objective To compare obstetric outcomes between adolescent pregnancies and pregnancies in women aged 20-30 years.

Design Unmatched case-control study.

Setting Department of Obstetrics and Gynaecology, Phra Pok Klao Hospital, Chantaburi.

Methods Six hundreds and fifty six singleton nulliparous adolescent pregnancies (age range 13-17 years) as study group compared with 1,344 control (age range 20-30 years) who were selected by systematic sampling between January 1994 and December 1996. Percentage, mean, standard deviation, Chi-square test, Fisher-exact test, t-test, odds ratio and 95% confidence interval were used for data analysis.

Results Comparing the obstetric outcomes that affected maternal and perinatal health, the antepartum and postpartum complications, low birthweight, low Apgar score and perinatal morbidity in adolescent pregnancies were significantly higher than the control group. Operative obstetric in adolescent pregnancies was significant lower than the control group. Intrapartum complications and perinatal mortality were not significantly different in both groups.

Conclusion Younger adolescent pregnancies had poor obstetric outcomes compared with pregnancies age 20-30 years. Younger adolescents should be a special target for pregnancy prevention and intervention.

Key words : obstetric outcomes, adolescent pregnancy

Chantaburi is a province located 200 kilometers East of Bangkok with 443,447 populations in 1998. At Phra Pok Klao Hospital which is the provincial hospital of Chantaburi, 3.93% of all birth in 1994 were in younger adolescent (age range 13-17 years), this increased to 5.19% in 1996. Pregnancy in adolescent was primarily a social problem but with some adverse outcomes of pregnancy because adolescent are said to have impaired physical, mental and socioeconomic status.[1] Most studies that reported adolescent

pregnancy documented increased risk for complications of pregnancy and poor perinatal outcome.[2-4] The objective of this case-control study was to assess obstetric outcomes of adolescent pregnancy compared with pregnancy in age range of 20-30 years in a health care setting and to investigate whether adolescent pregnancies have suboptimal obstetric outcomes.

Materials and Methods

From January 1994 through December 1996, there were 656 singleton nulliparous adolescent pregnancies (age range 13-17 years), gestational age at the time of delivery > 28 weeks and birthweight > 1,000 grams. These constitued the study group. One thousand three hundresd and forty four singleton nulliparous pregnancies in age 20-30 years were selected by systematic sampling from 4,679 pregnancies as the control group. Both groups of pregnant women delivered at Phra Pok Klao Hospital Chantaburi. Total samples of this study were 2,000 pregnant women which provided the case-control ratio equal to 1:2. Details of maternal and perinatal outcomes were collected including antepartum, intrapartum and postpartum complications, mode of delivery, birthweight, Apgar score, perinatal morbidity and mortality.

Statistical analysis was performed using Chi-square and Fisher exact test for categorical variables and t-test for continuous variables. Odds ratio and 95% confidence interval were calculated. Statistically significant was considered at $p < 0.05$.

Results

The mean (± standard deviation [SD]) ages in the study and control groups were 16.4 ± 0.8 years and 23.8 ± 2.8 years, respectively. There was a tendency toward later seeking of antenatal care among adolescent pregnancies than with pregnancy in the control group (18.6 ± 6.6 wks versus 14.9 ± 5.8 wks). This was significantly different (p-value < 0.001). The rate of no antenatal care was 4.4% in the study group and 0.7% in the control group which was significantly different ($p < 0.001$). There was no significantly different about the rate of detection of infectious diseases screening tests (VDRL and anti HIV) but anemia (Hct < 30%) was more common in adolescent pregnancies (11.2% versus 5.5% ; p-value < 0.001) (Table 1)

As to the obstetric outcomes that affected maternal health, the antepartum and postpartum complications in adolescent pregnancies were significantly higher than the control group (OR = 3.42, 95%CI = 2.41-4.85 ; OR 1.76, 95% CI = 1.01 - 3.05, respectively). Operative obstetric in adolescent pregnancies was significantly lower than the control group (OR = 0.50, 95%CI = 0.39 - 0.64). The intrapartum complications in the adolescent pregnancies was not significantly different from the control group (OR = 0.91, 95%CI = 0.75 - 1.10) (Table 2)

Regarding the obstetric outcomes that affected perinatal health, low birthweight, low Apgar score and perinatal morbidity were significantly higher than the control group (OR = 3.47, 95%CI = 2.37 - 5.08 ; OR = 4.11, 95%CI = 2.57 - 6.58 ; OR = 3.84, 95%CI = 2.50 - 5.92, respectively). The perinatal mortality in the adolescent pregnancies was not significantly different from the control group (OR= 3.09, 95%CI = 0.73 - 14.94) (Table 2)

Table 1. Baseline characteristics comparison in the adolescent and control groups.

	Adolescent (n = 656)	Age 20 - 30 (n = 1,344)	p-value
Age	16.4 ± 0.8	23.8 ± 2.8	
First antenatal care (wk)	18.6 ± 6.6	14.9 ± 5.8	< 0.001
No antenatal care (%)	4.4	0.7	< 0.001
VDRL positive (%)	1.0	0.8	0.621
Anti HIV positive (%)	4.4	2.3	0.056
Hct < 30% (%)	11.2	5.5	< 0.001

Table 2. Obstetric outcomes that affected maternal and perinatal health in the adolescent and control groups.

	Adolescent (n = 656) no (%)	Age 20 - 30 (n = 1,344) no (%)	OR*	95% CI @
Antepartum complications	93 (14.2)	62 (4.6)	3.42	2.41 - 4.85
Intrapartum complications	271 (41.3)	586 (43.6)	0.91	0.75 - 1.10
Postpartum complications	27 (4.1)	32 (2.4)	1.76	1.01 - 3.05
Operative obstetric	107 (16.3)	376 (28.0)	0.50	0.39 - 0.64
Low birthweight	79 (12.0)	51 (3.8)	3.47	2.37 - 5.08
Low Apgar score	58 (8.8)	31 (2.3)	4.11	2.57 - 6.58
Perinatal morbidity	66 (10.1)	38 (2.8)	3.84	2.50 - 5.92
Perinatal mortality	6 (0.9)	4 (0.3)	3.09	0.73 - 14.94

* Odds ratio
@ 95% confidence interval

Discussion

Previous reports of obstetric outcomes in adolescent pregnancies have yielded conflicting results either increased or decreased rate of maternal and perinatal complications when compared with pregnancies in adults.[2-6] Adverse obstetric outcomes that affected maternal and perinatal health such as antepartum and postpartum complications, low birthweight, low Apgar score and perinatal morbidity were observed more frequent in adolescent pregnancies than adults. This may have been attributable to lack of antenatal care or delayed in the seeking of antenatal care. This resulted from social impact more than reproductive disadvantages. Most adolescent pregnancies are unintended pregnancies. The mothers are more likely to be single, poorly educated and poor. However, the lack of agreement in various reports may also be related to the different in definition of adolescent used for analysis of obstetric outcomes. In this study, the definition of adolescent was pregnancy between the age 13-17 years because many studies reported that there were no significantly different in obstetric outcomes in adolescent pregnancies age up to 19 years old.[5] The design of this study was an unmatched case-control. We intended to minimize potentially confounding bias by including only nulliparous pregnancies in both study and control groups because there is some debate about obstetric outcomes in multiparous adolescent pregnancies, the second child born to a mother who is still an adolescent has a high risk of being a low birthweight or prematurity.[6,7] This is especially true when the first pregnancy ends in a preterm labor. Among these adolescents, the risk that a second child will be premature is at least twice as high as that among women with a previous preterm labor who are 20 or older.[7] Strikingly, adolescent pregnancies had an increased risk of ending in a low birthweight baby with low Apgar score and perinatal morbidity but reduced risk of having operative obstetric. The advantage of lower operative obstetric risk was likely because of smaller infants compared with infants in pregnancies age 20 - 30 (2940 ± 48 g versus 3093 ± 393 g.)

This study focused only on obstetric outcomes not on psychosocial effects of pregnancy, although some studies reported the rate of poor obstetric outcomes among adolescent pregnancies was due to prematurity and low birthweight resulted from biologic or sociodemographic factors. Our finding of higher adverse effects on yourger adolescent (age 13 - 17 years) compared with older pregnant women did not differ from other reports. We suggest that younger adolescent should be a special target for pregnancy prevention and intervention.

References

1. Cunningham FG, MacDonald PC, Gant NF, Leveno KJ, Gilstrap III LC, Hankins GDV, Clark SL. Williams obstetrsics. 20th ed. Connecticut : Appleton % Lange, 1997:569-72.
2. Amini SB, Catalano PM, Dierker LJ, Mann LI. Births to teenagers : Trends and obstetric outcomes. Obstet Gynecol1996;87:668-74.
3. Satin AJ, Leveno KJ, Sherman ML, Reedy NJ, Low TW, McIntire DD. Maternal youth and pregnancy outcomes : middle school versus high school age groups compared with woman beyond the teen years. Am J Obstet Gynecol 1994;71:184-7.
4. Miller HS, Lesser KB, Reed KL. Adolescence and very low birth weight infants : A disproportionate association. Obstet Gynecol 1996;87:83-8.
5. Fraser AM, Brockert JE, Ward RH. Association of young maternal age with adverse reproductive outcomes. New Engl J Med 1995;332:1,113-7.
6. Lubarsky SL, Schiff E, Friedman SA, Mercer BM, Sibai BM. Obstetric characteristics among nulliparas under age 15. Obstet Gynecol 1994;84:365-8.
7. Goldenberg RL, Klerman LV. Adolescent pregnancy-another look (Editorials). New Engl J Med 1995;332:1, 161-2.