

Original article**Pregnancy outcomes under 20 years in comparison with normal reproductive age women**

Zinatossadat Bouzari^{1, 2,3}, Mahtab Zeinalzadeh^{2,3}, Yousofreza Yosofniyapasha², Shahla Yazdani Cherati^{2,3}

1-Member of Cellular & Molecular Biology Research Center, Babol University of Medical sciences, Babol Iran

2- Infertility and Reproductive Health research Center, Babol University of Medical Science, Babol, Iran

3-Assosiated professor of Obstruction &Gynecology Department, Babol University of Medical Science, Babol, Iran

Abstract

Teenagers age is a transient mental and physical period between adolesence and childhood. Pregnancies that occur in women under 20 years of age are more high risk than 20-34 years. This study was conducted to comparison of pregnancy outcome in the age groups below and above 20 years.

This cross-sectional study was conducted of 100 cases in two groups, age group <20 and 20-34 age groupin pregnant women refferd to Ayatolah Rohani Hospital in Babol from September of 2006 to March of 2012. Sociodemographic and clinical data were extracted from patient records and were analyzed.

Results of the study showed that pre-eclampsia and the cesarean rate in pregnant women under 20 years and 34 to 20 had significant statistical difference (0.003, 0.015). Neonatal outcomes in pregnant women in two groups did not have any significant difference. Regression analysis to determine the number of visits during pregnancy reduces the risk of cesarean delivery (OR=0.52, p=0.041).

This study showed that maternal outcomes in a group of mothers under 20 years of age compared to a group of mothers above 20 years of age were more clinical but did not have any significant statistical difference except pre-eclampsia that had significant statistical difference too.

Key words: *High Risk Pregnancy, age ,cesarean delivery, pre-eclampsia*

Corresponding author: Yousofreza Yosofniyapasha, MD

Infertility and Reproductive Health research Center, Babol University of Medical Science, Babol, Iran

Introduction

According to World Health Organization, Teenagers age is an evolutionary stage and it is associated with biopsychological growth which is defined as the second decade of life (full 10 years to 19 years) (1). Recently, the occurrence of pregnancy less than 20 years of age has increased. Involved factors are earlier onset of puberty and lower age of marriage in comparison to before (2). Risk outcomes of pregnancy in this age are obscure and uncertain. Studies, reported different results of midwifery and medical problems of pregnancy in this age (3-4).

Although a number of studies demonstrated an increase in maternal and neonatal morbidity in this age including Anemia (4-5), gestational hypertension, preeclampsia, fetal growth restriction, preterm delivery and pre-maturity, low birth weight, and neonatal and infant mortality (6-11). Some recent studies showed that after controlling factors like first pregnancy under 20 years of age, risk of pregnancy does not increase biologically (12). On the other hand studies did not report any difference between the incidence of these outcomes in the age group under 20 and 20-34 (13-14).

Nevertheless pregnancy under 20 years is an event that can be seen around the world and prominent changes attract attention and concern among various nations, particularly in undeveloped countries (6). And in some countries pregnancy in this age is observed with an increase in prematurity, low birth weight, intrauterine growth restriction, Anemia, preeclampsia, fetal distress and an increase in cesarean delivery rates (15-16).

Nowadays health of youth and adolescents in the world is considered as an independent subject and because risk outcomes of pregnancy in this age are obscure and uncertain recent study was conducted in order to compare pregnancy outcomes at ages under and over 20 years in pregnant women referring to Ayatollah Rouhani Hospital of Babol.

Materials and Methods

This cross sectional study was conducted on two 100 person groups, one group of 20-34 years of age and another group of < 20 years of age of women referring to Ayatollah Rouhani Hospital of Babol for delivery from September of 2006 to March of 2012. Pregnant women with diseases such as: lupus, diabetes, immunological disease,

chronic hypertension, heart disease, nephropathy and thyroidopathy and neuropathy were excluded from study. Maternal initial data including parity, gravidity, maternal age, education, gestational age, history of infertility, rate of prenatal visits, occupation, age of pregnancy at the onset of prenatal care, marital status, smoking and drugs, socio-economic status and paraclinical experiments in prenatal period were documented. Pregnancy outcome including anemia of mother (Hgb < 10), urinal infection in pregnancy, oligohydromnios, fetal intrauterine growth restriction, fetal abnormality, premature rupture of membranes, vaginal bleeding during pregnancy, method of delivery, and in case of preterm delivery: reason for preterm delivery and newborn information including: neonatal weight, resuscitation for newborn, apgar score at 5 minutes, admitted in neonatal intensive care unit (NICU), neonatal mortality were documented.

Data were collected and recorded, and then was entered in statistical software SPSS 18 (Statistical Package for the Social Sciences) and was statistically analyzed. In order to define a relation between qualitative variables Chi-square test, and for quantitative

variables T-test was used. P-value < 0.05 showed significant statistical difference

Results

In this study mean and standard deviation of age of cases were 22.95 ± 5.44 . There was no significant statistical difference in pregnant women with less than or more than 20 years in relation to having a job or being a housewife, level of education and level of income in two groups but cesarean rate in pregnant women under 20 years was significantly more than women over 20 years of age ($p < 0.001$).

During pregnancy outcomes in pregnant women less than 20 years and pregnant women over 20 years of age are shown in Table number 1. In two groups only preeclampsia and cesarean rate had significant statistical differences (0.015 and 0.003 respectively). In studying method of delivery in studied cases there was a significant difference between two groups ($p = 0.003$). The most common reason of cesarean delivery in the group under 20 years was fetal distress and in women over 20 years of age was repeat cesarean sections which with excluding repeat cesarean section the two groups had no significant difference.

In this study prenatal outcome in pregnant women under 20 years and pregnant women over 20 years of age had no significant difference (Table 2).

The most common cause of admittance in first 24 hours in NICU in pregnant women under 20 years and over 20 years was icterus.

Table 1- Pregnancy outcome in women under and over 20 years

Pregnancy outcome	Under 20	Equal and more than 20	p	Test
Urinary Tract	(29/4)25	(25)29	0/3	Chi-Square
Oligohydramnios	(9/4)8	(5/2)6	0/24	Chi-Square
Intrauterine growth	(7/1) 6	(3/4)4	0/32	Fisher-Exact
preterm labor	(18/8)16	(10/3)12	0/12	Chi-Square
Preeclampsia	(15/3)13	(5/2)6	0/015	Chi-Square
premature rupture of	(10/6)9	(8/6)10	0/95	Chi-Square
Caesarean section	(37/6)32	(58/6)68	0/003	Chi-Square

Table 2- Neonatal outcomes in pregnant women under and over 20 years

Neonatal outcomes	Under 20 years	Equal and more	P	Test
Apgar score (mean±SD)				
First Minute	8/62±1/41	8/69±1/03	0/7	T-test
Five Minutes	9/76±1/14	9/72±1/02	0/79	T-test
Resuscitation				
Yes	(42/4)36	(48/3)56	0/4	Chi-Square
No	(57/6)49	(51/7)60		
Sex				
Female	(56/5)48	(53/4)62	0/67	Chi-Square
Male	(43/5)37	(46/6)54		
Admission to NICU				
Yes	(22/4)19	(17/2)20	0/36	Chi-Square
No	(77/6)66	(82/8)96		
Neonatal death				
Yes	(1/2)1	(0/9)1	1	Fisher-Exact
No	(98/8)84	(99/1)115		

Discussion:

In recent study preeclampsia in pregnant women under 20 years of age was more compared to women over 20 which had significant statistical difference. In Fraser and Jolly like our study preeclampsia in pregnant women under 20 years was reported more (15-16). In Behrouz Fadaei et al study preeclampsia in under 20 years was more clinically but no significant statistical difference was seen between two groups ($p=0.34$) (17).

Cesarean rate in women over 20 years was higher compared to women over 20 years and this difference was significant statistically. This result was unlike studies of Ekachai Kovavisarach in year 2010 (3). Also Fraser and Jolly studies reported high cesarean rate in women under 20 years too (15-16). The reason for this diversity in recent study with other studies could be because of low sample size in our study, on the other hand according to national programming and prenatal care, pregnant women referrals to health care centers were favorable and amount of referrals result in less cesarean rate.

Incidence of preterm delivery (under 37 weeks) in pregnant women under 20 years was higher than women over 20 years of age although with no statistical significance. In a study conducted in 2010 in order to compare maternal and prenatal outcomes in pregnant mothers under 20 years of age and 20-34 years, results showed that preterm delivery is a noticeable outcome in mothers under 20

years compared to older mothers (3). Also Costa MCO and Conde_Agudelo A reported that in cases with mothers who have less than 20 years of age preterm delivery is higher (18-19). But in a study conducted in 1390 in Isfahan it was specified that preterm delivery under 20 years is higher than older ages clinically but no significant statistical difference was seen between the two groups ($p=0.92$), which is similar to our study (17). Unlike our study Lao TT et al saw no difference in preterm delivery between two groups (20).

The most prevalent reason for preterm delivery in recent study in women under 20 years was preterm labor and in older pregnant women was premature rupture of membranes. Like our study in Lao TT et al study premature rupture of membranes In pregnant women under 20 years was significantly less than older pregnant women (20). But in the study which was conducted in 1390 in Isfahan it was clarified that premature rupture of membranes in under 20 years was higher than older ages clinically (17) which was unlike recent study. The reason for that could be because of low sample size in our study.

Fetal distress and fetal growth restriction in pregnant women under 20 years was higher than women over 20 years of age which was similar to Fraser and Jolly studies (15-16). Prenatal outcomes in recent study in lower than 20 years had no significant statistical difference compared to higher ages. This was in contrast to other studies which reported the relation of increases

of prematurity, low neonatal weight, neonatal mortality with pregnancy under 20 years of age (3,10,11,15,16,21,22) The reasons for this difference were favorable prenatal care and assistance of obstetrician and neonatal specialist and NICU being active in studied center.

Conclusion

In this study preeclampsia in pregnant women under 20 years of age was higher than 20-34 years. Oligohydramnios, intrauterine growth restriction, premature rupture of membranes, preterm delivery and urinal infection was higher in pregnant women under 20 years compared to 20-34 years clinically although no significant statistical difference was seen between two groups.

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