

Labour outcome in teenage in a sample of Kurdish pregnant women in maternity teaching hospital in Erbil city

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Abstract

Background and objectives

Teenage pregnancy is coming up as one of the most important public health problems all over the world and it is associated with significant pregnancy complications. Our objective was to determine the risks of adolescent pregnancy, and compare maternal and perinatal outcome among adolescent in comparison to older control.

Methods

This a randomized prospective clinical study conducted in labour room in Maternity Teaching Hospital in Erbil city-Kurdistan region –Iraq from January 2016 to December 2017 a five hundred seventy-two primigravid women were recruited and divided in to two groups; group one (286) women aged between (15-19) years and group two (286) women aged between 20-34 year

Results

The study shows significant difference regarding educational level most of the teenage groups were illiterates (60,7) % versus (51%) for control groups. Anemia was the only significant medical problem in teenage (33,3), low Apgar score and admission to neonatal care unit was significantly higher in teenage groups with (P value of 0,001).

Conclusion:

Young maternal age is associated with an increased risk of adverse maternal neonatal outcome.

Key words: Teenage pregnancy; Pregnancy outcome; Perinatal outcome.

Introduction

Teenage pregnancy is a common public health problem worldwide which has been considered a high-risk situation¹. Approximately 16 million adolescents aged 15 to 19 years old become pregnant each year, constituting 11% of all births worldwide, ninety-five percent of these births occur in low- and middle- income countries.^{1,2} The adolescent period is a time of significant growth; 45% of adult's weight and 15% of adult's height is attained during this stage.³ When pregnancy occur at this age continued growth of the mother could result in competition between her and the fetus for important nutrients and may be associated with increased risk of adverse

pregnancy outcomes.⁴ Complications during pregnancy and childbirth are consistently the second cause of death for girls aged 15 to 19 years old¹. Young girls who become pregnant are at high risk of abridged education, and thus limited economic prospects.⁵ Physical diseases such as anemia, malaria, HIV, and sexually transmitted diseases, as well as postpartum hemorrhaging, obstetric fistula, and the risk of maternal death, are all associated with teenage pregnancy. Additionally, they are at higher risk for mental health disorders such as depression in comparison to women who bear children at an older age.⁶ Adolescent mothers tend to have lower

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rates of cesarean deliveries and higher rates of vaginal deliveries.⁷ Teenage mothers require instrumental deliveries approximately twice as often as women aged 20 to 24 years.⁸ proposed explanations include physical immaturity of the younger mother and fright or lack of cooperation during the second stage of labor, other explanation young adolescents are still growing, and even during pregnancy they

Patients and Methods

This a randomized prospective clinical study conducted in labour room in maternity teaching hospital (MTH) in Erbil city- Kurdistan region –Iraq were the data collection was carried out from 1st of January 2016 to 30th of December 2017. Inclusion criteria were Singleton primigravida in their first pregnancy with gestational age of 24 week or more, no preexisting disease before pregnancy a total number of (286) teenage pregnant aged between (15-19) years old for the study group and (286) ladies aged between (20-34) years old for the control group the sample were collected randomly by selecting 2-3days/week and taking the cases for each group who admitted to the labour room and fulfill the inclusion criteria of the study. A comparison of pregnancy outcome was made on the bases of maternal age at delivery. These women were recruited on arrival in the labour ward, and followed up till the time of discharge from the hospital. Early neonatal outcome was recorded for 1 week. After explaining the aim of the study to each patient & taking written consent from, her, data was collected by interview using structured questionnaire Gestational age at time of delivery was calculated from the first day of the last menstrual period (LMP) and early 1st trimester ultrasonography Antenatal care (ANC) attendance was obtained by direct questioning of the patients about how many times she visited antenatal clinic or private outpatient clinics during pregnancy. ANC was classified into Adequate ≥ 4 or inadequate if < 4 taking in consideration that

may increase in height, This raises questions about the possible immaturity of pelvic bones, and consequently about obstructed labor in young pregnant adolescents.⁹ The aim of this study was to compare labor outcome in adolescent and non-adolescents primigravidae singleton ladies in regard to antenatal care, maternal complication, mode of delivery.

the visits were in different trimesters.¹⁰ Educational level divided according to stages of education they achieved: primary, secondary or college. Illiterate groups included all women who failed to achieved any educational level or they left their primary school. Complications of pregnancy prior to admission such as anemia (hemoglobin level less than 10,5 gm/dl), high blood pressure, high blood sugar, preeclampsia & antepartum hemorrhage were asked & recorded. All patients were examined generally along with the vital signs (pulse rate, respiratory rate, blood pressure & temperature), measurement of Blood pressure was taken in sitting position. Detailed abdominal examination including obstetrical examination was done for each patient with fetal heart monitoring & assessment of uterine contractions, followed by digital vaginal examination to determine presentation, station, and stage of labor, all these were recorded. For those who were high risk pregnancy in the control group they usually monitored by cardiotocography (CTG) and we followed up them accordingly. Mode of delivery was recorded as vaginal delivery or Cesarean section (C/S). Complications of the third stage of labor namely postpartum hemorrhage (PPH) was observed & recorded. The neonates were resuscitated by the junior doctors, the Apgar score were recorded at one and five minutes. Birth weight were divided into four groups as follows: < 1500 gm as very low birth weight, $\geq 1500 \leq 2500$ gm as low birth

weight, $\geq 2500 \leq 4000$ gm as normal birth weight, > 4000 gm as macrosomia.¹¹ Viability of newborn, admission to neonatal care unit (NCU) also observed. All patients' data entered using computerized statistical software; Statistical Package for Social Sciences version 21 was used. Descriptive statistics presented as (mean \pm standard deviation) and frequencies and percentages. Multiple contingency tables conducted and appropriate statistical tests performed, Chi-square used for categorical variables

(Fishers exact test was used when expected variables were less than 5). One-way ANOVA analysis was used to compare between more than two means. Statistical significance was considered whenever the P value was less than 0.05, the result presented as tables. Statistical analysis of the study was done by the community medicine specialist; this article was submitted to research ethics committee of Kurdistan Higher council of medical specialist and approved by them.

Results

During the period of the study, 572 pregnant ladies were recruited, equally divided in to two groups (286) of them were teenage (15-19) year old as teenage group, while the other (286) ladies aged (20-34) year old as adult group. The mean maternal age of teenage group was 17 ± 28 years and for adult group was 24 ± 1 years. While the mean gestational age was 36 ± 70 , and 36 ± 85 weeks successively. A high number

of non-educated women were found in the teenage group (80,7%) of them not reached their basic school this was statistically significantly in compares to adult ladies which was (70.6%). Regarding ANC there was not statistically significant association between both groups, although there was little difference in subset of ANC, this information is shown in more details in Table (1).

Table (1): Educational level and Antenatal care in women in both groups:

Variable	Categories	Teenage	Adult	P-value
Educational level	Illiterate	174 (60.8%)	146 (51%)	0.03
	Primary	57 (19.9%)	59 (20.6%)	
	secondary	10 (3.5%)	21 (7.3%)	
	College	45 (15.7%)	60 (21%)	
ANC visits	In adequate	139 (48.6%)	120 (42%)	0.38
	Adequate	147 (51.4%)	166 (58%)	
	Total	286 (100%)	286 (100%)	

Regarding medical diseases during pregnancy anemia was found to be the most pronouncedly statistically significant medical disorder during pregnancy that is most commonly seen in teenage group compared to adult group as shown in Table (2).

Table (2): Different medical diseases among participant in both groups:

Medical disease	Study groups		Total
	Teenage	Adults	
Preeclampsia	80 (62%)	81 (76.4%)	161 (68.5%)
Diabetes mellitus	6 (4.7%)	8 (7.5%)	14 (6%)
Anemia	43 (33.3%)	17 (16%)	60 (25.5%)
Total	129 (100%)	106 (100%)	235 (100%)

No statistically significant differences were observed among both groups regarding mode of delivery. Also there was no statistical significant association between primary PPH, blood transfusion in both groups only (42.3%) in the teenage group mothers developed primary PPH versus

(39.2%) in adult group and (35.3%) of teenage group participants received blood transfusion versus (35.7%) of the adult group with (P value 0.49 and 0.93) respectively. All these findings are shown in Table (3).

Table (3): Maternal intrapartum and postpartum outcomes of women in both groups

Variable	Categories	Study groups		P-value
		Teenage	Adult	
Mode of delivery	Vaginal	186 (65%)	188 (65.7%)	0.93
	Caesarean section	100 (35%)	98 (34.3%)	
Post-partum hemorrhage	Yes	121 (42.3%)	112 (39.2%)	0.49
	No	165 (57.7%)	174 (60.8%)	
Blood transfusion	Yes	101 (35.3%)	102 (35.7%)	0.93

The majority of the participants in both groups had alive babies (89.9%) versus (93%) for teenage group and adult group respectively. Although fresh stillbirth was more commonly seen in teenage group than adult group (10.1%) versus 7% respectively, but they didn't reach statistical significance also Significant association was observed between low Apgar score of babies in teenage group at first minute and adult group (P value 0.001), But no such significant association was observed

between the two groups regarding Apgar score at 5 minutes (P value 0.07) and early neonatal death (P value 0,09). A significant association was observed between both groups regarding NCU admission (P value 0.001), as (68.9%) were admitted to NCU versus (55.2%) in teenage group and adult group respectively. There was no significant association between the two groups regarding birth weight of the baby, (P value 0.86). All these findings are shown in the Table (4).

Table (4): Neonatal outcomes in study and control groups

Variable	Categories	Study groups		P-value
		Teenage	Adult	
APGAR1	Low	86 (30.1%)	47 (16.4%)	0.001
	Good	200 (69.9%)	239 (83.6%)	
APGAR5	Low	44 (15.4%)	29 (10.1%)	0.07
	Good	242 (84.6%)	257 (89.9%)	
Fetal viability	Alive	257 (89.9%)	266 (93%)	0.17
	Still birth	29 (10.1%)	20 (7%)	
Admission to NCU	Yes	197 (68.9%)	158 (55.2%)	0.001
	No	89 (31.1%)	128 (44.8%)	
Early neonatal death	Yes	97 (33.9%)	78 (27.3%)	0.09
	No	189 (66.1%)	208 (72.7%)	
Birth weight	< 1500 grams	6 (2.1%)	5 (1.7%)	0.86
	1500 – 2499 grams	39 (13.6%)	34 (11.9%)	
	2500 – 3999 grams	229 (80.1%)	237 (82.9%)	
	≥ 4000 grams	12 (4.2%)	10 (3.5%)	
	Total	286 (100%)	286 (100%)	

Discussion

Adolescent pregnancy is common health problem still found in both developed and developing countries; as adolescence comprise almost one fifth of the world population, which is over one billion. In the developing world more than one third of the population is under the age of 15 years, in Sub-Saharan Africa, about half of the population is under the age of 15 years.¹² Adolescent women face a greater risk of obstetrical complications than women in their twenties. Teenage pregnancy associated with a wide range of subsequent adverse health and social outcomes.¹³ in spite of that most teenagers have pregnancies that without major complications, and delivering healthy infants.¹⁴ So teenage pregnancies can be a

positive experience, particularly in the later teenage years.¹³ The present study aimed at elucidating maternal and neonatal outcome among adolescent primigravidae and older primigravidae. In this study, a high number of non-educated women are found in the teenage group especially in the young teenagers. Most of the teenage mother's education did not correlate with their age since they left school when they got married, and this is similar to the results of a study by Edrine et al.¹⁵ Which shows a higher proportion of inappropriate education for age in adolescents (82.5% versus 70.1%; P value=0.001). Regarding antenatal care our study showed no significant difference between both groups in attending antenatal care visits, this result

is similar to Chahande et al.¹⁶ who studied the relation of antenatal care services between adolescent and adult groups which did not show any statistical significance. On the other hand a study by Sharma A.¹⁷ shows that 63.3% of adolescents had ANC as compared to 82.3% of older women showed that adolescents had poor antenatal care which indicates that the teenage mothers were less careful about their pregnancy probably because of the lack of awareness and maturity; this discrepancy between older researches and this study may be explained by difference in sample size and more development of social media and more easily accessible health care centers regarding medical diseases associated with pregnancy; anemia is found significant in younger adolescents than older women. This result was also shown by Sharma et al.¹⁸ where 48% of adolescents suffered from anemia, as well as other published studies.^{19,20} Anemia is thought to be more in adolescents because an adolescents' developing body has to compete for nourishment with the fetus, causing rapidly depleting iron and nutrient reserves, other medical disorders (hypertension, gestational diabetes) are not increased in the adolescents of our study In this study adolescent mothers tend to have lower rates of cesarean deliveries and higher rates of vaginal deliveries, this result

Conclusion

In this study, we found that adolescent mothers have a low educational level and increased drop school outs as compared to adult mother, while most of teenage women delivered by vaginal delivery, low Apgar score, admission to neonatal care unit was

agree with that of Al-Ramahi et al.²⁰ which described a population of 267 adolescent pregnancies when compared with 500 pregnant women between the ages of 25–30 years, exhibited a significantly lower rate of cesarean sections.²⁰ Regarding postpartum hemorrhage (PPH) this study show no significant difference in the risk of PPH in adolescent mothers compared with adults, this was similar to result from Iacobelli S et al.²¹ while other study showed a significant decrease in PPH in teenagers de Vienn et al.²² and Bildircin et al.²³ noted an increase in PPH in teenage mothers. It appears that young maternal age may not have a direct association with PPH and such inconsistencies make it increasingly difficult to draw conclusions concerning adolescent mothers and PPH. In this study low Apgar score at one minute and admission to neonatal care unit were a statistically significant finding in teenagers compared to adult ladies, which were comparable with the studies of Mukhopadhyay et al.²⁴ but disagreed with the study of Conde-Agudelo et al.²⁵ they found that teenage pregnancy is not risk factor for low Apgar score in neonate. There was also a significance association between early neonatal death and teenage pregnancy in contrast to older pregnant ladies.

higher in teenage women so teenage pregnancy still at increased risk for adverse pregnancy outcomes in regard to maternal, and neonatal complications as compared with adult control mothers.

Conflict of interest

The author reports no conflicts of interest.

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