

OBSTETRIC CHARACTERISTICS AND COMPLICATIONS OF TEENAGE PREGNANCY

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ABSTRACT

Objective: To determine the obstetric characteristics and complications of teenage pregnancy.

Methodology: This cross-sectional comparative study was conducted at Gynae 'A' unit, Lady Reading Hospital Peshawar from January to December 2009. The analysis included data on 61 singleton adolescent women with ≥ 24 completed weeks gestation and were compared with 367 women in their twenties, after taking informed consent. The data was retrieved after interviewing the women and also from the hospital-based maternal health medical records including demographic details, complications of pregnancy, and maternal and neonatal outcomes. Information was recorded for all the cases on structured proforma.

Results: This data showed that adolescent pregnancies were at increased risk of operative vaginal delivery (14.7% vs 20% [$p < 0.05$]) and perinatal mortality of 18% (5 stillbirths and 6 early neonatal deaths) particularly hypertensive diseases of pregnancy (31.2 vs 8.1% [$p < 0.05$]), placental abnormalities (13.1 vs 6.8 [$p < 0.05$]) and anaemia (41 vs 15 [$p < 0.05$]). On the other hand it was observed that adolescent pregnancy was associated with lower risks of cesarean delivery and macrosomia and preterm delivery ($p > 0.05$). Further adjustment for weight gain during pregnancy and Apgar score at 5 min did not change the observed association.

Conclusions: These results suggest that teenage pregnancies were at increased risks for adverse pregnancy outcomes particularly hypertensive diseases of pregnancy, placental abnormalities and anaemia compared to adult pregnancy.

Key words: Teenage pregnancy, Low birth weight, Pre-term delivery, Apgar score.

INTRODUCTION

Teenage pregnancy is an important public health problem as it often occurs in the context of poor social support and maternal wellbeing¹. 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) suggested². Pregnancy in this transitional stage is a common public and social health issue with medical consequences worldwide. Adolescent pregnancy has been a problem with adverse obstetric and neonatal outcomes being influenced by biological immaturity, unintended pregnancy, inadequate perinatal care, poor maternal nutrition, and stress³⁻⁶. Considering, therefore, these possible complications regarding the maternal and perinatal

outcome of adolescent pregnancies, I aimed to determine the obstetric characteristics and complications of teenage pregnancy and to compare the perinatal outcomes with the adult group in this unit.

METHODOLOGY

All the women having teenage pregnancies received in the unit 'A' of the Obstetrics and Gynaecology Department, Lady Reading Hospital Peshawar, during one year period from January 2009 to December 2009 were recruited through consecutive non-probability sampling. They were received either from emergency department (A/E), regular outpatient department or private clinics. These patients were selected after applying the criteria i.e. all teenage mothers between 13-19 years and mothers between 20-29 years as control

group. All those with age ≥ 30 , grand multiparty (≥ 5), congenital abnormalities, multiple pregnancies, gestational age less than 24 weeks, preexisting medical diseases of pregnancies, history of drug abuse or smoking were excluded from the study.

There were a total of sixty one (61) cases of teenage pregnancies during the study period. The adolescent age group was defined as young women with the age below 19 years. These were compared with 367 women with the age higher than 19 years. Medical, obstetric and socio-economic aspects of these pregnant women were studied and results were analyzed.

Birth records and patients files were assessed in terms of their demographic characteristics including maternal age, gravidity, parity, body mass index (BMI), and their first visit to hospital. Maternal outcome was categorized as anemia (Hb <10.5) ante partum hemorrhage i.e placenta previa, placental abruption (mild, moderate, severe) pregnancy induced hypertension (blood pressure $>140/90$) pre eclampsia ($>140/90$, proteinuria, \pm edema) who were normotensive at booking, eclampsia (pre eclampsia+ fits). Proteinuria was defined as 2+ protein or more on dipstick testing in at least two consecutive midstream specimens without infection. Diagnoses of outcome measures such as abruption were based on clinical features.

Patients' labor characteristics including: gestational age at delivery, mode of deliveries and antenatal obstetric complications such as preterm labor and neonatal outcome parameters (birthweight and Apgar scores at 1st and 5th minute of newborn, the incidence of normal and cesarean deliveries in the women and compared these with the rates of adults (control). Data analysis was performed by using Statistical Package for Social Sciences (SPSS) version 10

software. Whether the continuous variables were normally distributed or not was determined by Shapiro Wilk test. Data was shown as mean \pm standard deviation or median (minimum-maximum) for continuous data, where applicable. While, the mean differences were compared by Student's t test, Mann Whitney U test was applied for the comparison of the median values. Nominal data were analyzed by Pearson Chi-square. A p value less than 0.05 was considered statistically significant.

RESULTS

The demographic characteristics including maternal age, gravidity, parity, prepregnancy and postpregnancy BMI, first prenatal visit and weight gain during pregnancy in both groups are recorded in Table 1. All of the adolescent pregnant were married, 10% were in their second pregnancy, and 4% were in their third pregnancy.

Table 2 presents the obstetric outcomes and characteristics of Adolescent and Adult pregnant showing significant difference the mean birth weight of newborns in adolescence group compared with adult group and the cesarean delivery in the two groups. The ratio of the operative delivery with vacuum extraction was 4.9% in the adolescent group while there was no operative delivery in the adult group.

Regarding indications of cesarean section in the adolescent and adult groups, significant difference was found in cephalopelvic disproportion, fetal distress and malpresentation, which was higher in the adolescent ($P<0.05$). Table 3 presents the ratio of the obstetric complications in the adolescent and adult groups showing significantly higher rate of hypertensive diseases of pregnancy, placental abnormalities and anemia in adolescent pregnant.

Table 1: Demographic characteristics of the adolescent and adult Pregnant women

	Adolescent (n=61)	Adult (n=367)	p value
Age (mean \pm SD)	17.62 \pm 1.27	26.22 \pm 2.51	<0.05
Gravida (median)	1(1-4)	5 (1-12)	NS
Parity (median)	1(0-3)	5 (0-11)	NS
Nulliparity (%)	86.2*	39.1	<0.05
BMI on admission (mean \pm SD)	25.92 \pm 3.13*	28.34 \pm 4.1	<0.05
First prenatal visit (mean \pm SD)	19.04 \pm 11.83*	13.98 \pm 8.47	<0.05
Weight gain (mean \pm SD)	13.26 \pm 4.84	13.63 \pm 3.35	NS

Data was presented as median (min-max), mean \pm SD, * $P<0.05$ NS - not significant

BMI= Body Mass Index

Table 2: Obstetric Characteristics of Adolescent and Adult Patients

	Adolescent (n=61)	Adult (n=367)	p value
Gestational age at delivery	38.22±1.08	38.12±2.46	NS
Mode of delivery (%)			
Spontaneous VD	49.2	38.5	<0.05
Induced VD	16.4	14.6	NS
Cesarian delivery	14.7	20.0	<0.05
Apgar score 1st minute	8.8±0.8	8.9±1.5	NS
Apgar score 5th minute	9.7±0.3	9.5±0.6	NS
Birth weight (kg)	3087±540	3325±540	<0.05

Data was presented as mean±SD, P<0.05 NS- not significant

Table 3: Obstetric complications in the adolescent and adult groups

	Adolescent % (n=61)	Adult % (n=367)
Premature delivery	6.5 (4)	8.7 (32)
Pre-eclampsia / eclampsia	31.2* (14)	8.1 (30)
Placental abnormalities	13.1* (8)	6.8 (25)
Macrosomia	1.6 (1)	2.7 (10)
Anemia	41 (25)*	15 (55)

*P<0.05

DISCUSSION

Whether the association between teenage pregnancy and adverse birth outcomes could be explained by deleterious social environment, inadequate prenatal care, or biological immaturity remains controversial⁷⁻⁹.

The objective of this study was to determine and explore the effect of young age on the outcome of teenage pregnancies and whether they are associated with increased adverse birth outcomes independent of known confounding factors. As apposed to other studies it is clear that the facts regarding adolescent pregnancies here seem somewhat different from other countries related to ethnic and socio-cultural differences. Especially, in Pakistan, most adolescent pregnant women are married and well supported by their families. Hence, most of their pregnancies are planned and intended but the ignorance and lack of education has affected the outcome.

Although the results of most previous studies evaluating the effect of adolescent pregnancy on perinatal outcome and its obstetric risks seem controversial. But there is a general agreement that adolescent pregnancy is associated with high risk of serious obstetric complications and poor neonatal outcomes such as preeclampsia,

significant anemia, and mechanical and operative delivery^{7,10}.

This study also showed that adolescent pregnancies were at increased risk of pre eclampsia / eclampsia(31.2%), anemia (41), placental anomalies(13.1%) and which is in agreement with other studies^{11,12}.

The fact that the operative vaginal delivery and cesarean delivery in adolescent pregnant women are higher compared with pregnant adult women is stated by some studies. On the contrary, other reported that operative vaginal delivery, elective cesarean or emergency cesarean were all less likely in adolescent women as in this study (14.7%)^{7,13,14}.

Teenage women were more likely to have low birth weight babies (p<0.05) forceps or vacuum (4.9%). However, they were less likely to have preterm births delivery (p>0.05) as apposed to some studies^{15,16}.

There are still controversial approaches and results, existing in the literature about the indications of cesarean section for adolescent pregnant women 17-23. We observed that the most common indication were cephalo-pelvic disproportion and acute fetal distress in adolescent

pregnancy. The most probable reasons for these complications seem due to both biological and sociodemographic factors often influencing adolescent pregnancy outcome²⁴. Since the lack of early and adequate prenatal care is a serious problem in, adequate prenatal care is important to reduce these adverse effects of adolescent pregnancy, neonatal risks and complications by providing multidisciplinary care and guidelines^{7,12,17,25-29}. In accordance with these reports, this study demonstrated that adolescent pregnant women have visited the hospital later than the adult group (<0.05).

On the whole this data showed that adolescent pregnancies were at increased risk of pre eclampsia / eclampsia, anemia and antepartum hemorrhage and lower risks of cesarean delivery, and non-significant risk of macrosomia.

Due to the limitations of this study, we were not able to compare detailed perinatal and neonatal outcomes except for some of the pregnancy outcomes. As a result, however, the exact causes for adverse perinatal outcomes, due to multiple factors, are not identified. It is suggested, therefore, that further studies of large number subjects will be required. However obstetric and perinatal complications in this population of pregnant women could be significantly reduced by providing better antenatal care and timely interventions where needed.

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