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TEENAGE PREGNANCY;

FETOMATERNAL OUTCOME IN TEENAGE PREGNANCY AT CIVIL HOSPITAL HYDERABAD

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ABSTRACT... Objectives: To assess the fetomaternal outcome in teenage pregnancy at Civil Hospital Hyderabad. **Study Design:** Case series study. **Place and Duration of Study:** Department of Obstetrics and Gynecology, Civil Hospital, Hyderabad, from 1st July 2014 to 31st December 2014. **Subject and Methods:** A total of 117 primigravida teenage women with singleton term pregnancy were included in this study. Maternal and Perinatal outcomes were measured and recorded. **Results:** The average age of the women was 17.35±1.06 years. Considering adverse maternal outcome anemia was observed in 35.89% women, Pregnancy induced hypertension (PIH) 35.04%, preterm pregnancy 23.07% and pre-eclampsia was observed in 15.38% women. Regarding fetal outcome, there were 99 (84.61%) live births and 18 (15.38%) stillbirths and low birth weight was observed in 19.6% (20/102). **Conclusion:** This study found Still Birth, Low Birth Weight and prematurity a major problem to babies of Teenage women, while Pregnancy induced hypertension, anemia and Pre eclampsia are the problems faced by Teenage pregnant women.

Key words: Asian Adolescents Pregnancy, Maternal and Perinatal Outcomes, Primigravida.

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INTRODUCTION

Teenage pregnancy is defined as the pregnancy in women between 13-19 completed years at delivery.[1] It is considered as a high risk Pregnancy and it can lead to various social, medical and physical problems.[2] According to UNICEF about 10% of all births worldwide occur in teenage mother, which are about 13 million births every year. 90% of the teenage pregnancies occur in developing countries. In Developing countries like Asian countries, teenage birth rate was reported from 84 to 140 per 1000 births.[3] In South Asian countries about 60% of girls are married by 18 years of age and one fourth are married by 15 years.[4] Teenage birth in United Kingdom ranges 30.8% compared to 9.3% in France, 14% in Germany, 7.9% in Spain while 11.9% in Pakistan.[5,6]

Early pregnancy is a risk factor for adverse pregnancy outcome, it manifest as prematurity in 51.8% newborn low birth weight in 38.9%, still births in 5.1%. In mothers it causes iron deficiency anemia in 22.9%, pregnancy induce hypertension in 13%, preeclampsia in 14.5% and fetal distress in (6%).[1,2,4,5,7]

The rationale behind this study is that being high risk pregnancies, an enhanced care could be planed and provided to these adolescent mothers so as to prevent catastrophic obstetric complications and prevention of early marriages through a planned social work can be done.

OBJECTIVE

To determine the fetomaternal outcome in teenage pregnancy.

METHODOLOGY

Operational Definitions

Teenage pregnancy: Pregnancy in a woman under the age of 20 years (13 to 19 years)

Maternal Outcome: It was measured in terms of: Pregnancy induced hypertension (13%): Elevated

/ raised blood pressure (≥ 140/90mmHg) on 2 occasions at least 4 hours apart.

Preeclampsia (14.5%): Multisystem disorder characterized by pregnancy induced hypertension with significant proteinuria (> 300 mg/24 hours)

Anemia (22.9%): It is defined as a hemoglobin concentration of less than 10.5 gm/dl.

Preterm Delivery: Birth of a baby before 37 weeks of pregnancy (Determined by Ultrasound).

Fetal outcome**:** It was measured in the terms of: Still Birth (38.9%): A baby born after 28 weeks of pregnancy with no signs of life. Low birth weight (5.1): Birth weight less than 2.5 kg irrespective of gestational age.

A Case series study was done by Non probability consecutive technique at Department of Obstetrics and Gynecology Civil Hospital, Hyderabad in 117 teenage pregnant women from 1st July 2014 to 31st December 2014. Sample Size was calculated by taking the least prevalence of 5.1% by using open-epi-info sample size formula with 95% confidence interval and margin of error 4%.

Inclusion Criteria was all primigravida women age between 13 to 19 years carrying a single term pregnancy with the gestational age more than 28 weeks assessed by ultrasound. All the gravid women below the 13 years and above 19 years of age or Gravid women carrying multiple pregnancies or Multigravida or Smoker/Alcoholic pregnant women or Women in any major illness existing from pre pregnant state or Women with family history of hypertension were excluded from the study.

After getting approval from ethical review committee of university, the study was conducted in all the primigravida women age less than (13 to 19) years carrying a single term pregnancy of 28 weeks or above was involve in the study from antenatal and labour wards after taking their written and well informed consent. Gravid women aged 20 years or above, multigravida, women with twin pregnancy, taking alcohol and smokers and those with history of hypertension in family were excluded from the study to control the confounding factors. A predesigned Proforma attached at the end of thesis was used to collect the information. Variables included age, demographic details, booking status and gestational age in weeks (as calculated from ultrasound).

Maternal outcome measures included Pregnancy induced hypertension (Elevated / Raised blood pressure ≥ 140/90 mmHg on 2 occasions at least 4 hours apart), Preeclampsia (Multisystem disorder characterized by pregnancy induced hypertension with significant proteinuria > 300 mg/24 hours), Anemia (It is defined as a hemoglobin concentration of less than 10.5 gm/dl), Preterm Delivery (Birth of a baby before 37 weeks of pregnancy), mode of delivery (Vaginal / Instrumental / Cesarean section). Indication of caesarian section if performed was noted.

Perinatal outcome measures included Apgar score (It was taken at birth and at 10 minutes), still birth (A baby born after 28 weeks of pregnancy with no signs of life), Low Birth weight (Birth weight less than 2.5 kg irrespective of gestational age). Data was analyzed on computer using SPSS version 17.0. Prior to data entry, all forms were checked for completeness and consistency as well as coding. Data was double entered using appropriate data entry software and Statistical analysis was performed after the data cleaning. Mean and standard deviation was calculated for quantitative variables like age, gestational age. Frequencies and percentages were computed for qualitative variables like demographic details, mode of delivery, booking status, and fetal outcome (Low birth weight, still birth) and maternal outcome (PIH, Pre eclampsia, Anemia and Preterm delivery). Stratification was done with respect to mode of delivery, age, gestational age, booking status was done. Post-stratification chi square test was applied. $P \leq 0.05$ was taken as significant.

RESULTS

This study was done in 117 primigravida teenage women with single term pregnancy were included in this study. Age distribution is presented in Table

1. Women average age was 17.32 ± 1.05 years and mean gestational age was 36.82 ± 2.14 weeks (Table-II). 64.95% were un-booked cases and 39 (35.04%) were booked cases (Table I). Mostly women were from urban area as shown in Table-I. Regarding mode of delivery, seventy eight (66.67%) women were delivered vaginally and cesarean section was done in 39 (33.33%) cases as shown in Table-I. The commonest indication of cesarean section was fetal distress 33.33% (13/39), followed by CPD 25.65% (10/39) other indications are presented in Figure-1.

Frequency of maternal outcome in teenage pregnancy is presented in Table-III, in which anemia was observed in 35.89% women, PIH is 35.04%, preterm pregnancy 23.07% and pre-eclampsia was observed in 15.38% women. Regarding fetal outcome, there were 99 (84.61%) live births and 18 (15.38%) were stillbirths. There were 21.57% (22/102) low birth weight neonates as shown in Table-I.

Fetomaternal outcome comparison between two different age groups is showed in table 4 in which anemia was significantly high in 18 to 19 years old mothers as compared to 15 to 17 old, while delivery of premature babies was higher in 15 to 17 years of women as compare to 18 to 19 years women as shown in Table-IV.

In comparison between normal and cesarean section, women who delivered by cesarean section had higher pregnancy induced hypertension and normally delivered women had higher arte of anemia as compared to women who underwent cesarean section. Low birth weight rate in neonates was higher in cesarean section as compared to normal delivery (p=0.024) as shown in Table-V. Comparison of fetomaternal outcome between gestation age and booking status is also presented in Table-V.

Age (Years)	Number	Percentage
15-17	49	41.88
18-19	68	58.11
Booking Status		
Booked	41	35.04
Unbooked	76	64.95
Living Area		
Urban area	73	62.39%
Rural area	44	37.61
Delivery Status		
Cesarean Delivery	39	33.33
Normal Delivery	78	66.67
Fetal Outcome		
Alive Baby	99	84.61
Still Birth	18	15.38
Low Birth Weight	20	19.6
Normal Birth Weight	82	80.39

Table-I. Patients status (n=117)

Descriptive Statistics		Age (Years)	Gestational Age (Weeks)
Mean		17.32	36.82
Std. Deviation		1.06	2.15
95% Confidence Interval for Mean	Lower Bound	17.16	36.44
	Upper Bound	17.54	37.22
Median		18	37
Inter quartile Range		2	2
Minimum		15	30
Maximum		19	41

Table-II. Descriptive statistics of the women (n=117)

Maternal Outcome	Count	Percentage
Pregnancy induced Hypertension	41	35.04%
Pre-Eclampsia	18	15.38%
Anemia	42	35.89
Preterm Delivery	27	23.07%

Table-III. Frequency of maternal outcome in teenage pregnancy n=117
Multiple outcomes are also count so don't add up to 117

Fetomaternal Outcomes	Age Groups		P-Value
	15 to 17 (n=49)	18 to 19 (n=68)	
PIH	19(38.77%)	22(32.35%)	0.79
Pre-Eclampsia	11(22.44%)	8(11.76%)	0.64
Anemia	16(32.65%)	24(35.29%)	0.045*
Preterm Delivery	19(38.77%)	9(13.23%)	0.046*
Still Birth †	09(18.36%)	05(7.35%)	0.118
Low Birth Weight †	12(24.48%)	10(14.70%)	0.60

Table-IV. Comparison of fetomaternal outcome between teenage groups
Chi-Square test applied for each outcome searately. *Significant - † Fetal outcomes

Fetomaternal	Mode Of Delivery		P-Value
	Normal (n=79)	Caesarean Section (n=38)	
PIH	16(20.25%)	23(60.52%)	0.001
Pre-Eclampsia	13(16.45%)	6(15.78%)	0.72
Anemia	36(45.56%)	4(10.52%)	0.009
Preterm Delivery	23(29.11%)	5(13.15%)	0.12
Still Birth †	12(15.1%)	3(7.89%)	0.55
Low Birth Weight †	13(16.45%)	9(23.68%)	0.024*

Table-V. Comparison of fetomaternal outcome between normal and caesarean section
Chi-Square test applied for each outcome separately. *Significant - † Fetal outcomes

Fetomaternal Outcomes	Gestational Age (Weeks)		P-Value
	≤37 weeks (n=69)	>37 weeks (n=48)	
PIH	23(33.3%)	16(33.3%)	0.999
Pre-Eclampsia	9(13%)	10(20.8%)	0.26
Anemia	21(30.4%)	19(39.6%)	0.31
Preterm Delivery	28(40.6%)	0(0%)	0.0005
Still Birth †	11(15.9%)	4(8.3%)	0.22
Low Birth Weight †	9(15.5%)	13(29.5%)	0.08

Table-VI. Comparison of fetomaternal outcome between gestational ages
Chi-Square test applied for each outcome separately. *Significant - † Fetal outcomes

Fetomaternal	Booking Status		P-Value
	Booked (n=)	Un-booked (n=)	
PIH	10(25.6%)	29(37.2%)	0.21
Pre-Eclampsia	5(12.8%)	14(17.9%)	0.47
Anemia	14(35.9%)	26(33.3%)	0.78
Preterm Delivery	11(28.2%)	17(21.8%)	0.44
Still Birth†	34(87.2%)	68(87.2%)	0.99
Low Birth Weight†	5(14.7%)	17(25%)	0.23

Table-VII. Comparison of fetomaternal outcome between booked and un-booked cases
Chi-Square test applied for each outcome separately. *Significant - † Fetal outcomes

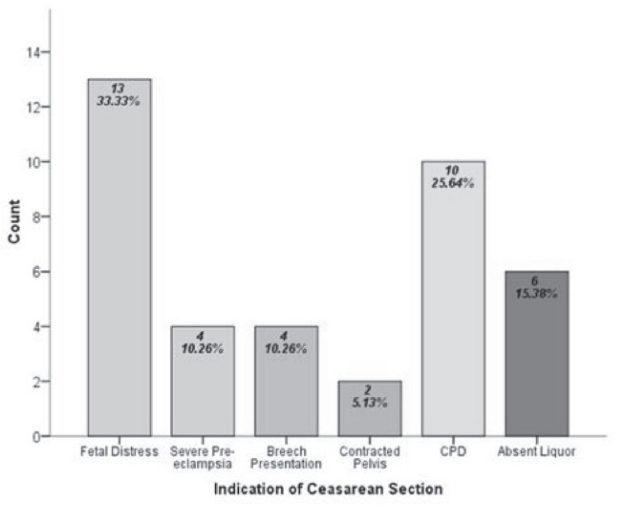

Figure-1. Indication of caesarean section n=39

DISCUSSION

Pakistan is a country where, consanguineous and early age marriages giving rise to adolescent pregnancy is a common entity. Reproductive needs are different in Teenage pregnant girls. In Teenage pregnancies there are complications from pregnancy and childbirth that leads to death in teenage girls in developing countries. About 70,000 teenagers' girls die each year because they are pregnant before they are physically mature enough, that's why teenage pregnancies and births are considered as high risk pregnancies.

Better myometrial function, greater connective tissue elasticity and lower cervical compliance in teenage pregnant girls' favors better spontaneous vaginal delivery. Regarding mode of delivery in our study, 66.67% women were delivered vaginally and cesarean section was done in 33.33% cases, this confirmed that teenage mothers had a significantly higher incidence of spontaneous vaginal delivery. Our result is similar to a study showing 71% women delivered vaginally while 25% had cesarean section[8], 92% teenage women delivered vaginally in another study.[9] A similar study from Indonesia revealed cesarean section in 40.3% teenage women.[10] A study from Iran showed 82.5% adolescents mothers delivered 17.5% of the infants were born through caesarean delivery, respectively.[11]

In our study the average age of the women was 17.35±1.06 years, that is similar to a study having mean age of adolescent subjects was 17.3 + 1.5 years.[12] In another study mean age of teenage mothers was 17.8 years.[8]

Most common indication of cesarean section in our study was fetal distress 33.33% (13/39), followed by CPD 25.65% (10/39), that is similar to a local study showed the main indication of caesarean section was fetal distress and cephalopelvic disproportion.[13] While an unsimilar international study revealed non progression of labor (25.3%) as a cause of C/Section.[10]

There are many health risks in adolescent pregnancy. As pregnant teenagers often receive inadequate antenatal care, their anemia during labour and the postpartum period usually get worse. Severe anemia can lead to preterm labour, low birth weight and related complications, post-partum hemorrhage and sepsis in addition to impaired physical and cognitive development, and increased risk of morbidity in children and reduced work productivity in adults. In our study 35.89% of pregnant adolescents had anemia that is similar to study, in which 46% adolescent girls were anemic.[12] Another unsimilar study showed anemia in 67% teenage pregnant mothers, this high rate may be due to presence of many immigrant women from tribal areas[9], a study from Rawalpindi also showed anemia in 58% teenage pregnant women.[14]

The present study revealed preterm labor in 23.07% women that is similar to a study that showed preterm labor in 13.1% teenage women.[15]

The present study showed PIH in 35.04% and pre-eclampsia in 15.38% women, it is similar to a study done at Rawalpindi that showed PIH in 10% teenage women.[14] While in an unsimilar study from Karachi only 4.5% women had had PIH.[8] Another unsimilar international study showed Pregnancy induced hypertension in 1.2% teenage women[11], while another showed Pre-eclampsia in 8.69% cases and cephalo-pelvic disproportion in 7.60 % cases.[16] A similar study from Hyderabad showed teenage pregnant women developed

Pre eclampsia in 19.5% (n = 88) and placental abruption in 4.6% (n = 21).[17]

Though the adverse fetal outcome in developed countries is very low, yet it is higher in babies born to teenage mothers as compared to babies born to mothers in their twenties. In our study regarding fetal outcome, incidence of still birth was found to be 15.38% and low birth weight was observed in 19.6% (20/102), it is similar to a local study that showed 20.04% low birth weight newborn to teenage women.[18] An unsimilar study showed 24% low birth weight newborn in teen age women, this high rate may be due to selection criteria of study women in their study, they choose only anemic teenage pregnant women.[19]

CONCLUSION

This study found Still Birth, Low Birth Weight and prematurity a major problem to babies of Teenage women, while Pregnancy induced hypertension, anemia and Pre eclampsia are the problems faced by Teenage pregnant women. Pregnancy in teen age girls is a big public health problem. Although Obstetrical problems in teen age girls can be managed by modern medical care but still the risks associated with pregnancies in teenage girls are there, that can be diminished by Proper antenatal care, institutional delivery and postnatal care.

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2	M. Nadeem Chohan	Critical analysis, Final Approval.	
3	Mumtaz Mahesar	Data analysis, Discussion, writing.	