

# Comparison of Maternal and Fetal Complications Between Teenage Pregnancies and Pregnancies of the age of 20-26 Years

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## ABSTRACT

**Objective:** To compare maternal complications between teenage pregnancies and pregnancies of the age of 20-26 years.

**Material & Methods:** This cohort study was carried out in DHQ/GMC Teaching Hospital Gujranwala during March 2021 till August 2021. Non probability purpose sampling technique was used. Total 200 patients were included in study and divided into two groups. Teenage patients assigned as Group A and group B assigned to patients of age 20-26 years. Both groups assessed for maternal outcomes, antepartum, intrapartum and postpartum complications noted and compared.

**Results:** The following complications were observed among teenage compared with adult pregnancy; anemia (39% versus 18%), hypertension (15% versus 6%), preterm labor (21% versus 9%), prolonged labor (8% versus 29%), and postpartum hemorrhage (13% versus 13%). The results were statistically significant ( $p$ -value < 0.05).

**Conclusions:** The complications related to teenage pregnancy are high. These can be avoided by establishing contraceptive strategies.

**Keywords:** Teenage pregnancy; maternal complications; anemia.

## INTRODUCTION

A woman is considered to be pregnant teenager if she becomes pregnant before her 18th birthday. <sup>1</sup> Teenage pregnancy is predominantly viewed as a social problem. In society the teenage mothers are stigmatized and their sense of responsibility, mothering skills and maturity is questioned. <sup>2</sup> Moreover, 85% of adolescent women are in the developing world and 25% of all maternal deaths occur in such age group. <sup>3</sup> Worldwide, the rates of teenage pregnancy range from 143 per 1000 in some sub-Saharan African countries to 2.9 per 1000 in South Korea. <sup>4</sup> Adolescent pregnancy are at increased risk for neonatal complications as prematurity, low birth weight, IUGR, neonatal mortality and still birth. <sup>10-12</sup> The maternal complications like PIH, preeclampsia, and anemia in pregnancy, perineal tear and episiotomy are also common among adolescents. <sup>5</sup> A teenage mother is at greater risk than women over age 20 for pregnancy complications, such as premature labour, anaemia and high blood pressure. These risks are even greater for teens that are under 15 years old. <sup>6</sup>

The prevalence of teenage pregnancy in Pakistan is 15%. According to 2001-2002 survey 5% of married female aged 15 years had begun child bearing; less than 50% have antenatal care visit. According to 1998 population census 54% of the population (around 71 million) is below the age of 20. Adolescent (13-19yr) account for 23.3% (nearly 31 million) of Pakistan's population and youth 15-24 years for 19% (over 25 million). <sup>7</sup> Teenage birth rates in the United States rose in 2007 for the second year in a row. <sup>8,9</sup> There has been some decrease in the teenage pregnancy rate over the last decade in the UK but rates are still considerably higher than those in other European countries. <sup>10</sup> The lowest teenage pregnancy rates are found in the Netherlands. <sup>11</sup> Anemia in teenage pregnancies is 47.1% compared to 29.9% in the age after it. <sup>12</sup> 11.4% of primigravida teens suffer from Pregnancy induced Hypertension whereas 2.2% is the figure for age between 20-30 years. <sup>13</sup> Risk of preterm labour is 24% 27 and 7.9% <sup>12</sup> respectively. Prolonged labour is seen in 5.8% of teenagers <sup>12</sup> while it is 23.4% <sup>14</sup> for the other group. Postpartum hemorrhage is 12.8% in teenage deliveries <sup>15</sup> but 2.3% in mothers at 20 or above. <sup>12</sup> The rationale of this study was to compare the problems of the teenage pregnancy with the control group.

## MATERIAL AND METHODS

**Study Design:** This Cohort study was conducted in Department of Gynecology and Obstetrics DHQ/GMC Teaching Hospital Gujranwala during March 2021 till August 2021.

**Sample Size:** Sample size of 200 cases was calculated with 80% power of test, 5% level of significance and taking expected percentage of pregnancy induced hypertension in both groups i.e. 11.4% in teenage group versus 2.2% in pregnancies of age 20-26 years.

**Sampling Technique:** Non-probability purposive sampling

**Sampling Criteria:** In this study all primigravidas with age 13-19 years included in group A and primigravida of age 20-26 years age in control group. However all illegal pregnancies, mother with pelvic deformity and mothers having uncontrolled hypertension, Diabetes mellitus, and known cardiac disease excluded from the study.

**Data Collection and Data Analysis Procedure:** After taking informed consent, included cases were studied. Teenage patients were assigned as Group A. Patients in age group 20-26 years was designated as Group B. They were assessed for maternal outcomes. In antepartum problems, anaemia, PIH, pre-term labour was noted. In intrapartum problem prolonged labour was studied. Postpartum hemorrhage was also being considered in postnatal outcomes.

The collected information was entered and analyzed by using computer software SPSS version 14. Quantitative data like age was presented in form of mean + standard deviation. Qualitative data like anaemia, pregnancy induced hypertension, preterm labour, prolonged labour and postpartum hemorrhage were presented in the form of frequencies and percentages. Chi-square test was used to compare maternal complications in both groups.  $P$  value < 0.05 was considered as significant.

## RESULTS

Two hundred patients were included in the study.

**Distribution of patients by age:** In group A, 100 patients were enrolled. The mean age of the patients in group A was 16.67 + 3.08 years [range 13 – 19]. Of these, there were 37 (37%) patients in the age range of 13 – 16 years and 63 (63%) patients in the age range of 17 – 19 years. (Table 1) In group B, the mean age of the patients was 25.98 + 5.62 years [range 20 – 26]. Of the 100 patients included in group B, there were 48 (48%) patients in the age range of 20 – 23 years and 52 (52%) patients of the age range of 24 – 26 years. (Table 1)

**Distribution of patients by Anemia:** Anemia was present among 39 (39%) patients in group A and 18 (18%) patients in group B while 61 (61%) patients in group A and 82 (82%) patients in group B were not anemic. The two groups were also compared with each other. Chi-square test was applied as test of significance and

calculated p-value was 0.001. The results were statistically significant. (P< 0.05) (Table 2)

**Distribution of patients by pregnancy induced hypertension:** In group A, 15 (15%) patients were diagnosed with hypertension, while it was not present among 85(85%) patients. In group B, 6 (6%) patients were diagnosed with hypertension, whereas 94 (94%) patients did not have hypertension. On comparison, calculated p-value was 0.038. The results were statistically significant. (Table 3)

**Distribution of patients by preterm labor:** In group A, 21 (21%) patients delivered preterm, whereas 79 (79%) patients delivered at term. In group B, 9 (9%) patients had preterm delivery while 91 (91%) delivered at term. The two groups were compared by applying chi-square test. Statistically, the results were significant (p < 0.05). (Table 4)

Table 1: Distribution of patients by age (n=200)

Age in years	Group A		Group B	
	No. of patients	Percentage	No. of patients	Percentage
13 – 16	37	37	0	0
17 – 19	63	63	0	0
20 – 23	0	0	48	48
24 – 26	0	0	52	52
Mean + SD	16.67+ 3.08		25.98+5.62	
Range	13-19		20-26	

Table 2: Distribution of patients by anemia (n=200)

Parameters		Group				p-Value* (Significance)
		A		B		
		No.	%	No.	%	
Anemia	Yes	39	39	18	18	0.001 (Significant)
	No	61	61	82	82	

Table 3: Distribution of patients by pregnancy induced hypertension (n=200)

Parameters		Group				p-Value (Significance)
		A		B		
		No	%	No	%	
Pregnancy Induced Hypertension	Yes	15	15	6	6	0.038 (Significant)
	No	5	85	94	94	

Table 4: Distribution of patients by Preterm labor (n=200)

Parameters		Group				p-Value (Significance)
		A		B		
		No.	%	No.	%	
Preterm labor	Yes	21	21	9	9	0.017 (Significant)
	No	79	79	91	91	

Table 5: Distribution of patients by Prolonged labor (n=200)

Parameters		Group				p-Value (Significance)
		A		B		
		No.	%	No.	%	
Prolonged labor	Yes	8	8	29	29	0.000 (Significant)
	No	92	8	71	71	

Table 6: Distribution of patients by Postpartum hemorrhage (n=200)

Parameter		Group				p-Value (Significance)
		A		B		
		No	%	No	%	
Postpartum hemorrhage	Yes	13	13	3	3	0.009 (Significant)
	No	87	87	97	97	

**Distribution of patients by prolonged labor:** In group A, 8 (8%) patients had prolonged labor as compared to 29 (29%) patients in group B. While 92 (92%) patients in group A and 71 (71%) patients in group B had term delivery. The two groups were compared by

applying chi-square test. Statistically, the results were significant (p < 0.05). (Table 5)

**Distribution of patients by postpartum hemorrhage:** In group A, postpartum hemorrhage was seen among 13 (13%) patients, while 87 (87%) pregnant women did not have postpartum hemorrhage. In group B, 3 (3%) patients had postpartum hemorrhage, while 97 (97%) patients did not have postpartum hemorrhage. The results were statistically significant (p < 0.05). (Table 6)

## DISCUSSION

Teenage pregnancy is a high risk pregnancy. Teenage mothers are less likely to gain adequate weight during pregnancy leading to low birth weight. Teen age mothers are at greater risk of having medical complications.<sup>16</sup> The results of this study showed that teenage mothers are prone more to be anemic, more chances of preterm birth and a higher rates of post partum hemorrhage.<sup>17</sup>

In this study, anemia was seen among 39% teenage patients, while 18% of adult pregnant women were pregnant (p < 0.05). This finding is also similar to the study done by Qazi G, et al.<sup>18</sup> who showed that anemia was more frequent i.e. 41% in teenage group as compared to 25% in adult age group. The results were statistically significant. Preterm labor, a most common abnormality detected in many patients. The study by Naqvi MM, et al. Showed that preterm delivery was also seen in a higher number i.e. 7.7% among patients with versus 5.9% (not significant).<sup>19</sup> Similarly, almost no significant difference was found between the two i.e. 6.5% among adolescence as compared to adults.<sup>18</sup> The studies done by Naqvi MM, et al.<sup>19</sup> showed that a hypertension was more frequent among teenage mothers as compared to adult women i.e. 6.4% among adolescent versus 15.8% among adults.

In our study, 8% patients had prolonged labor as compared to 27% adult mothers. This may be attributed to the fact that size of the baby may be smaller so, which may not cause cephalopelvic disproportion. Postpartum hemorrhage was seen more frequently i.e. 13% among teenage mothers as compared to 3% to the adult mothers. However, Briggs NM, et al.<sup>20</sup> did not show a significant difference between the two groups i.e. 4, 4% with teenage pregnant women as compared to 5.7% among adult mothers.

## CONCLUSION

The teenage pregnancy is problematic and may be associated with increased frequency of complications related to pregnancy i.e. hypertension, preterm labor, anemia and postpartum hemorrhage. So, it is mandatory to evaluate these complications during the antenatal follow up of teenage mother. Moreover, steps should be taken to implicate the contraceptive polices to decrease the frequency of teenage pregnancy by improving the strategies to avoid complications.

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