

**STUDY OF COMPARISON OF PREGNANCY AND FOETAL OUTCOME AMONG THE PREGNANT ADOLESCENT (13-19YRS) AND CONTROL (20-25YRS) GROUPS**Dharmendra Raut<sup>1</sup>, Amol Patil<sup>2</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: BACKGROUND:** Teenage pregnancy is the most important risk factor for complications during pregnancy as well as foetal outcome like low birth weight. Adolescent group is already suffering from health problems; in addition to that pregnancy increases the risk to mother as well as foetus. **METHODS:** the prospective case control study carried out at Obstetric department. Adolescent (13-19yrs) & Control (20-25yrs) age group pregnant women were included for study purpose. Complication during pregnancy like Pregnancy Induced Hypertension, anemia, ante partum hemorrhage, as well as foetus outcome like birth weight, and term pregnancy were recorded. All data analyzed using MS excel 2010. **RESULT:** A total of 320 i.e. 160 from each group pregnant mother were analyzed. Mean age of adolescent pregnancy was 15.8 yrs of age. 65.3% of total ante partum complication was from adolescent group. Cephalopelvic disproportion (100% vs0.0%), Intra Uterine Growth Retardation (83.3% vs. 16.7%) & anemia (75% vs. 25%), were the most common complication in adolescent group. 70% of caesarean section, 76% of preterm, 56% of the low birth weight babies were from adolescent group. **CONCLUSION:** Adolescent pregnancy was associated with higher risk of adverse pregnancy as well as foetal outcomes. These can be prevented by timely intervene throughout pregnancy. Comprehensive adolescent pregnancy programs could be effective system for improving compliance with prenatal care for the vast number of young mothers.

**KEYWORDS:** Adolescent, Control, Foetal, Pregnancy, Outcome.

**INTRODUCTION:** Adolescence is a period of transition from childhood to adulthood. There is a rapid physical, psychological and emotional development during this phase when the individual needs adjustment with family and society. The reproductive system is anatomically immature among adolescents. Health problems in childhood and adolescence reflect disease patterns in later life & can also affect the health of future offspring.

Worldwide, it is estimated that every year >11% children are born to adolescent. Seven countries account for half of all adolescent and India is one of them.<sup>1</sup> Scholl et al in a meta-analysis and review of pregnancy complications in developing countries observed that teenagers were at increased risk of maternal anemia, pre term birth and caesarian section.<sup>2</sup> Pregnancy at an early age is associated with greater health risk for mother. In low and middle income countries, complications of pregnancy and child birth are the leading cause of death in young women aged 15-19 yrs. Unwanted pregnancies may end in abortions, which are often unsafe in this age group.<sup>3</sup>

Most reports of birth to teenagers indicate an increased risk for complications of pregnancy and poor neonatal outcome, especially preeclampsia and low birth weight infants. This study is another humble attempt to study the maternal and fetal outcome of adolescent pregnancy (13-19yrs) and compare the same with pregnancies from control group (20-25).

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**METHODS:** The present prospective study carried during 2008 out at obstetric department of Government tertiary care hospital.

The study included the cases with age group (13-19 yrs) while control from age group 20-25 yrs having confirmed pregnancy. Irrespective of marital status, all cases during study period were included. Those pregnancies >25 yrs of age, or history of medical illness like diabetes, asthma, cardiac problems were excluded from the study. Institutional ethical committee approval was taken prior to study. The enrolled participants were studied till delivery. The certainty of gestation was noted by the last menstrual period, clinical assessment of mother or by ultrasound.

Various defined variables were included in the study. Haemoglobin level less than 11gm/dl at any stage of pregnancy considered anemia. Burning micturition & a positive bacteriological culture of urine considered as a urinary tract infection. Hypertension was considered when two diastolic blood pressure readings at least 6hrs apart were > 90mm of Hg. Atonic postpartum hemorrhage including retained placenta were considered as a third stage complication. Perineal tear, cervical tear were considered as traumatic postpartum hemorrhage and breast abscess was taken separately as postpartum complications.

Labour pain resulting in delivery before 37 completed weeks of gestation was considered as a spontaneous preterm labour. Onset of the active phase of labour was generally defined as 4cm of cervical dilatation, unless there were numerous cervical examinations revealing an obvious inflection point at which the slope of the labor curve increased markedly. Duration of the second stage was the interval between the first documentation of complete cervical dilatation and delivery of the infant. Abnormal progress of labour was an indication for caesarean delivery when the responsible physician diagnosed a labour disorder. Apgar score less than five at one minute was taken as evidence of birth asphyxia. Neonates were considered low birth weight (LBW) if their birth weight is <2500 gm. Neonatal death & the presence of respiratory distress syndrome (RDS) also recorded.

All data entered, cleaned and analyzed in Microsoft excel. Frequency distribution and chi square test, t test used as test of significance.

**RESULTS:** Total 320 cases were included during the study period from both the groups i.e. 160 from each group. Table 1 shows the distribution of the cases as per socio-demographic profile. Mean of adolescent pregnancy was 15.8yrs as compared to 22.23yrs in control group. 4.4% unmarried pregnancies & 11.3 % pregnancies were multigravida in adolescent group.

Table 2 shows 65.3% of total cases of Ante partum complications were from Adolescent group as compared to only 34.7% among control group. Cephalopelvic disproportion (100% vs 0.0%), Intra Uterine Growth Retardation (83.3% vs. 16.7%) & anemia (75% vs. 25%) were the most common complication in adolescent as compared to control group ( $p < 0.05$ ). Intrapartum complications were 66% in Adolescent group as compared to only 34% among control group. Deep transverse arrest (100.0 vs 0%), Non progress of Labour (62.5 vs 37.5) & Foetal distress, (66.6 vs. 33.4) were more in adolescent group ( $p < 0.05$ ). 72% of the post-partum complications were from adolescent group. Postpartum hemorrhage was most common in adolescent group ( $p > 0.05$ ).

Table 3 shows, 70.2% vs. 29.8 % of Caesarian section as well as pre term pregnancies (76% vs. 24%) were observed more in adolescent group as compared to control group ( $p < 0.05$ ). Out of 100 Low birth Weight i.e. LBW (Birth Weight <2500kg) babies, 56% newborn babies were from adolescent group as compared to 44% newborn babies from control group i.e. pregnancy age

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between 20-25yrs ( $p < 0.05$ ). Mean birth weight  $\pm$  S.D. was  $2.36 \pm 0.39$  vs  $2.57 \pm 0.42$  comparable among adolescent vs. control group respectively. Out of 46 babies having apgar score less than 5 at one minute, 25(54.5%) were from control group which was statistically not significant ( $p > 0.05$ ). Out of 28, 20(78%) babies from adolescent mother has birth asphyxia (0.05). Out of 6, 5(83.3%) neonatal death were form adolescent mothers ( $p < 0.05$ ).

**DISCUSSION:** It is well known that an adolescent pregnancy is a high risk pregnancy and is associated with distinct hazards to the mother and the child. Few studies on adolescent pregnancies have been done in India which supports that maternal and foetal outcome is at risk among this group.<sup>4,5,6</sup> In relation to these we carried out present study in a diverse population of a metro Politian city & hence the results can be extrapolated to the general population. We included the 160 participants from adolescent pregnancies (13-19 yrs) and control group (20-25yrs) for study purpose.

In general population the age of marriage is 15-22 yrs despite the amendment of marriage act in 1978. Our study shows (Table 1) that the mean age of the patient in study group was 15.8 yrs. It suggest chances of becoming pregnant in adolescent increases with early marriages.<sup>4</sup> In certain regions of India like Uttar Pradesh, Bihar, Assam, Rajasthan, Orissa child marriage is very common. 7 % in adolescent groups were unmarried. This shows avoidance of reporting to health facility by unmarried adolescent pregnancies. 12.4% were multigravida among adolescent pregnancies while Padte et al<sup>5</sup> revealed no multipara in adolescent group.

Table 1: Socio-demographic profile of the study participants from the adolescent pregnant (13-19yrs) and control group (20-25 yrs).

Variables	Adolescent Group (13-19 yrs) No (%)	Control Group (20-25 yrs) No (%)
<b>Age</b>	15.8 + 2.1*	22.23+ 2.9*
<b>Race</b>		
Hindu	96(60)	99(61.9)
Muslim	63(39.4)	61 (39.1)
Christian	01(0.6)	0 (0.0)
<b>Marital Status</b>		
Married	153(49.5)	156(51.5)
Unmarried	07(63.6)	04 (36.4)
<b>Parity</b>		
Primigravida	142(81.4)	33(18.6)
Multigravida	18(12.4)	127 (77.6)

Table 1

\*Mean+S.D.

In present study, cephalopelvic disproportion (100% vs0.0%), Intruterine Growth Retardation (83.3% vs 16.7%) & anemia (75% vs. 25%), & Pregnancy Induced Hypertension (70%

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vs. 30%) were the most common complication in adolescent as compared to control group ( $p < 0.05$ ). Indrani Dutta & Prashant Joshi found 68.7% of anemia among adolescent pregnancies.<sup>7</sup> Other studies also showed high rates of teenage mothers with anemia probably because of poor nutrition.<sup>8, 9</sup> Intrapartum complications like Deep transverse arrest (100.0 vs. 0%), Non progress of labour (62.5 vs. 37.5) & foetal distress (66.6 vs. 33.4) were more in adolescent group which was statistically significant. Rajel Thaker et al found cephalopelvic disproportion (CPD) in 45.2%, fetal distress in 15.7%, Non progress of labour in 13.6% which is lesser as compared to our study.<sup>10</sup> 72% of the postpartum complication were from adolescent group. Postpartum hemorrhage was more in adolescent group ( $p > 0.05$ ). In control group only 10% of the pregnancies had intra partum complications (Table 2). Thus leading complications in this group were non progress labour & premature rupture of membrane. No maternal death was observed during the study period.

Table 2: Comparison of occurrence of complications during antepartum, intrapartum & Postpartum period among adolescent & control pregnant group.

Complications	Adolescent Group (13-19 yrs) No (%)	Control Group (20-25 yrs) No (%)	Total	P value
<b>Antepartum</b>				
Anemia	21 (75.0)	07 (25.0)	28	p<0.05
Pregnancy Induced Hypertension	12 (70.5)	05 (29.5)	17	
IntraUterine Growth Retardation	05(83.3)	01 (16.7)	06	
Postdatism	10 (52.6)	09 (47.4)	19	
Cephalo-Pelvic Disproportion	09(100.0)	00 (0.0)	09	
PROM	04 (66.6)	02 (33.4)	06	
Antepartum Haemorrhage	02(100.0)	00 (0.0)	02	
Others	01(9.0)	10 (91.0)	11	
<b>Total</b>	<b>64(65.3)</b>	<b>34 (34.7)</b>	<b>98</b>	
<b>Intrapartum</b>				
Foetal distress	08(66.6)	4(33.4)	12	p<0.05
Meconium	02(40.0)	3(60.0)	05	
Non progress of Labour	05(62.5)	3(37.5)	08	
Deep transverse arrest	03(100.0)	0(0.0)	03	
Other	13(68.4)	06(31.6)	19	
<b>Total</b>	<b>31(66.0)</b>	<b>16(34.0)</b>	<b>47</b>	
<b>Postpartum</b>				
Post- Partum Hemorrhage	05(71.4)	02(28.6)	07	p>0.05
Atonic	01(50.0)	01(50.0)	02	
Puerperal Sepsis	01(100.0)	00(0.0)	01	
Breast abscess	01(100.0)	00(0.0)	01	
<b>Total</b>	<b>08(72.0)</b>	<b>03(28.0)</b>	<b>11</b>	

Table 2

P<0.05 =Statistically Significant

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Al-Ramahi & Saleh S. had reported that, Cephalo Pelvic Disprportion leads to higher rate of operative interventions and instrumental deliveries.<sup>11</sup> We also observed similar findings i.e.70.8% of the total caesarean section & 61% out of forceps delivery were from adolescent group. 76% of total pre term was from adolescent group. Chen XK et al have reported an association between teenage pregnancy and preterm delivery.<sup>12</sup> 56 % of Low Birth Weight babies were from adolescent group as compared to 44 % from control group. ( $p<0.001$ ). This can be correlated to the risk factors like adolescent anemia, more number of pre-term, lack of nutritional support, early marriages in adolescent group. Other studies has also found adolescent pregnancy as a risk factor for low birth weight babies.<sup>4, 5, 6, 10, 13</sup> In relation to foetal outcome, 78% babies having birth asphyxia, 83.3% of neonatal deaths were form adolescent mothers as compared to control group which was also statistically significant (Table 3). NFHS-3 also reported Infant mortality is 77 per 1, 000 for teenage mothers, compared with 50 for mothers age 20-29.<sup>14</sup>

Table 3: Mode of delivery, term wise and neonatal outcome among adolescent and control pregnant group.

Variables	Adolescent group (13-19 yrs) No (%)	Control group (20-25 yrs) No (%)	Total	p value
<b>Mode of delivery</b>				
Normal	115(45.2)	139 (54.8)	254	p<0.01
Forceps	11 (61.1)	07 (39.9)	018	
Caesarean Section	34 (70.8)	14 (29.2)	048	
<b>Term of pregnancy</b>				
Full-Term	141(47.8)	154(52.2)	295	p<0.01
Pre-term	19 (76.0)	006(24.0)	25	
<b>Birth weight(Kg)</b>				
1500-2000	17(47.2)	19(52.8)	36	p<0.001
2001-2499	39(61.0)	25(39.0)	64	
>2500	104(47.3)	116(52.7)	220	
<b>Apgar score at one minute</b>				
<5	21(45.6)	25(54.4)	46	p>0.05
>5	139 (50.9)	134 (49.1)	273	
<b>Foetal outcome</b>				
Still Birth	0(0.0)	01(100.0)	01	p<0.05
Birth Asphyxia	20(71.4)	08(28.6)	28	
Neonatal Death	05(83.3)	01(16.7)	06	

Table 3

P<0.05 =Statistically Significant

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**CONCLUSION:** The study concludes that most of the complications were due to anatomical & Physiological in capabilities in an adolescent mother which can be prevented by timely intervention before the fetus is compromised. Teenage pregnancy should be discouraged not only to minimize these problems of young pregnant mother but also to limit family size by proper use of contraception. Comprehensive adolescent pregnancy programs could be effective system for improving compliance with prenatal care for the vast number of young mothers.

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