

A Study of Maternal and Fetal Outcome in Teenage Pregnancy as Compared to 20 to 30 Years age Group at Tertiary Care PBM Hospital, Bikaner

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Abstract

Background: World Health Organization defines Teenage Pregnancy as “any pregnancy from a girl who is 10-19 years of age”, the age being defined as, her age at the time the baby is born. Often the terms “Teenage pregnancy” and “Adolescent pregnancy” are used as synonyms.

Aim: To study clinical fetomaternal and epidemiological aspects of teenage pregnancy as compared to 20-30 years age group.

Material & Methods: This was a hospital based prospective comparative study conducted on 200 females which were divided into 2 groups i.e. teenage group and 20-30 years age group during a 1 year period from 1st Sept 2020 to 31st August 2021 after taking ethical committed approval and informed consent from subject.

Results: Majority of the cases in study group belonged to 19yrs (73%) and 23-25yrs (42%) in control group. Mean BMI in study and control groups were 23.72 ± 2.18 kg/m² and 24.03 ± 3.29 kg/m² ($p > 0.001$). Majority of mothers in both groups had favourable bishop score. Caesarean section was more in study group than that of control group. Mean birth weight in study and control groups were 2.66 ± 0.49 kg and 3.04 ± 0.44 kg respectively ($p < 0.001$). Neonatal complications were more in study group being low birth weight followed by RDS, sepsis and birth asphyxia respectively while in control group low birth weight followed by MAS, RDS.

Conclusion: We concluded that there is increase in both maternal complications like Anemia, Pre eclampsia, Intra uterine growth restriction, Still births, Preterm deliveries and fetal complications like Low birth weight babies, Respiratory distress syndrome, Perinatal mortality and Birth asphyxia in teenage pregnancy. Therefore Adolescent pregnancy should be discouraged by increasing the age at marriage and providing them quality education, helping in building self confidence and educating the young girls regarding marriage, safe sex, safe motherhood and contraception.

Keywords: Teenage Pregnancy, Caesarean Section, Respiratory Distress Syndrome

Introduction

Pregnant women in developing countries are on average younger than their Western counterparts and, furthermore, 11% of all births were reported to be given by adolescent mothers¹. Maternal and

neonatal deaths are the most powerful indicators of health care in a given country; therefore, due to the higher rate of observed deaths (25%) in adolescent mothers, this group should be

considered the reference population for the establishment of effective health care policies². Child marriages are common traditional practices even though the law prohibits marriage below 18 years for women and 21 years for men³. Generally these young girls are expected to become pregnant soon after marriage in order to prove their fertility. According to the latest Pakistan Demographic and Health Survey (PDHS), 40% of women are married by the age of 18 years. However, the proportion of teenagers who have begun child bearing has gone down from about 16% in 1990-91 to 9% in 2007⁴.

Teenage pregnancy is an important public health problem in both developed and developing country, as it is a 'high- risk' or 'at-risk' pregnancy due to its association with various adverse maternal and fetal outcomes which results in increased mortality and morbidity of the mother and the child⁵.

The evidence which is available about the outcome of teenage pregnancy is conflicting to say the least. Teenage pregnancies have been reported to be associated with an adverse obstetric outcome^{4,6}. There is a strong correlation between the age of the mother and maternal mortality and morbidity. Girls aged 10-14 years are five times more likely to die in pregnancy or childbirth than women aged 20-24 years. Girls aged 15-19 years are twice as likely to die⁷. Many studies have reported an increased risk of maternal complications like pregnancy-induced hypertension, preeclampsia, eclampsia, prolonged labour and cephalo-pelvic disproportion in pregnant teenagers⁸. In addition, adverse pregnancy outcomes like preterm delivery, low birth weight infant, respiratory distress syndrome, stillbirths and perinatal deaths have all been associated with adolescent mothers⁸

Materials and Methods

Study setting:

This was a hospital based prospective comparative study conduct in the Department of Obstetrics and Gynecology, S.P. Medical College

Bikaner & associated Group of Hospital, Bikaner, Rajasthan during the period from 1st September 2020 to 31st August 2021. Two hundred pregnant females were selected and out of the 100 females each were divided in these groups i.e. teenage group and 20 to 30 years age group.

Inclusion Criteria:

1. Age 16 – 19 years
2. Primigravida
3. Gestational age >34weeks
4. Singleton pregnancy

Exclusion Criteria

1. Gestational age <34 week
2. Multigravidad
3. Elderly primigravida(>30 years)
4. Medical Disorders like
 - Heart Disease
 - Liver Disease
 - Cancer
 - Renal diseases
 - Autoimmune diseases

Sampling Method: Simple Randomization Method

Data Collection

This prospective study was conducted in PBM Hospital Bikaner, All pregnant women coming to OPD and directly to labor room for admission were included in the study group.

Information regarding age, educational status, occupation, marital status, age at marriage, health awareness, knowledge about pregnancy and delivery, contraceptive knowledge, ante natal visits was obtained from history.

Basic check up like Height, weight of the patient and BP check up were obtained. Investigations like-

1. CBC, BT, CT, Urine complete microscopy and examination, RBS, Viral markers.
2. Thyroid profile USG for Fetal well being
3. LFT, RFT, Coagulation Profile
4. PBF, Type of Anemia

Complications during antenatal, delivery and post partum period was also be noted. Details regarding mode of delivery and birth weight of the baby was noted. Baby details noted and followed up till discharge.

Data Analysis

Data were enclosed in SPSS software for Statistics version 17.0. Analysis was done using

descriptive statistics like mean, standard deviation, proportion etc. Inferential statistics like chi-square test for association, 't' test to know the differences between means and other relevant statistical tests were used. A p value <0.05 is considered as significant

OBSERVATION

Table 1: Characteristics of different parameters

Variables		Study Group		Control Group		Total	
		No.	%	No.	%	No.	%
Age Group (years)	17	5	5.0	0	-	5	2.5
	18	22	22.0	0	-	22	11.0
	19	73	73.0	0	-	73	36.5
	20-22	0	-	24	24.0	24	12.0
	23-25	0	-	42	42.0	42	21.0
	26-28	0	-	27	27.0	27	13.5
	29-30	0	-	7	7.0	7	3.5
Booking Status	Booked	49	49.0	65	65.0	114	57.0
	Unbooked	51	51.0	35	35.0	86	43.0
Area	Rural	73	73.0	59	59.0	132	66.0
	Urban	27	27.0	41	41.0	68	34.0
Educational Status	Illiterate	45	45.0	29	29.0	74	37.0
	Primary	34	34.0	35	35.0	69	34.5
	Middle	21	21.0	24	24.0	45	22.5
	Secondary	0	-	9	9.0	0	-
	Graduate	0	-	3	3.0	3	1.5
Socioeconomic Status	Lower	21	21.0	3	3.0	24	12.0
	Upper Lower	36	36.0	22	22.0	58	29.0
	Lower Middle	43	43.0	7	7.0	50	25.0
	Upper Middle	0	-	68	68.0	68	34.0

In present study the above table shows majority of the cases in study group belonged to 19yrs (73%) and 23-25yrs (42%) in control group. In study, 73% cases in study group, 59% in control group belonged to rural area and this difference was found statistically significant ($p<0.05$). Most of cases in study group were unregistered 65% and 41% in control group and this difference was found statistically significant ($p<0.01$). In study group 45% of females were illiterate compared to

control group where 35% females were primary school and had higher educational studies and this difference was found statistically significant ($p<0.01$). Present study showed that majority of females in study group belong to lower middle 43% where in control group 65% females belong to upper middle and this difference was found statistically significant ($p<0.01$) making socioeconomic status important as a indicator for teenage pregnancy

Table 2: Distribution of females according to chief complaints in both groups

Chief Complaints	Study Group		Control Group		Total		χ^2	P
	No.	%	No.	%	No.	%		
Anemia	59	59.0	19	19.0	78	39.0	33.628	<0.001
Eclampsia	10	10.0	2	2.0	12	6.0	5.674	0.017
Pre-Eclampsia with Severe Symptoms	2	2.0	5	5.0	7	3.5	3.701	0.054
Gestational Hypertension	12	12.0	9	9.0	21	10.5	0.385	0.535
IUFD	1	1.0	1	1.0	2	1.0	-	-
Gestational DM	2	2.0	4	4.0	6	3.0	0.687	0.0407
PROM/PPROM	8	8.0	10	10.0	18	9.0	0.244	0.621
Abruptio Placenta	2	2.0	3	3.0	5	2.5	0.205	0.651
IUGR	3	3.0	5	5.0	8	4.0	0.521	0.0470
Post Dated Pregnancy	4	4.0	12	12.0	16	8.0	4.348	0.037

The above table shows that in study group 59% females had Anemia where as 19% in control group had anemia followed by eclampsia as a chief complaint and this difference was found statistically significant ($p < 0.05$). Antenatal complications like anemia, eclampsia and GHTN found to be more in study group than that of control group. Post date pregnancy found to be more in adult mothers than that of teenage mothers.

Table 3: Distribution of females according to APGAR score at 1 minutes and 5 minutes in both groups

APGAR	Apgar at 1 min		Apgar at 5 min	
	Study	Control	Study	Control
0-3	3(3%)	1(1%)	3(3%)	1(1%)
4-6	59(59%)	54(54%)	15(15%)	20(20%)
7-10	38(38%)	45(45%)	82(82%)	79(79%)
Mean	6.17	6.19	7.38	6.84
SD	1.31	0.99	1.49	0.88
P	0.903		0.002	

Table 4: Distribution of females according to neonatal complications in both groups

Neonatal Complications	Study Group		Control Group		Total	
	No.	%	No.	%	No.	%
LBW	39	39.0	10	10.0	49	24.5
MAS	1	1.0	2	2.0	3	1.5
RDS	7	7.0	2	2.0	9	4.5
Congenital Anomaly	2	2.0	1	1.0	3	1.5
Sepsis	2	2.0	1	1.0	3	1.5
Birth Asphyxia	2	2.0	1	1.0	3	1.5
HbsAg Reactive	0	-	1	1.0	1	0.5
HIE	0	-	1	1.0	1	0.5
IUD	1	1.0	1	1.0	2	0.5
No Complication	46	76.0	80	80.0	156	78.0
Total	100		100		200	

Table 3 shows mean APGAR at 5 minutes in study group was 7.38 ± 1.49 and in control group 6.84 ± 0.88 and this difference was found statistically significant ($p < 0.01$).

Table 4 shows Neonatal complications were more in study group being low birth weight followed by RDS, sepsis and birth asphyxia respectively while in control group low birth weight followed by MAS, RDS.

Table 5: Distribution of females according to puerperal complaints in both groups

Puerperal Complications	Study Group		Control Group		Total		χ^2	p
	No.	%	No.	%	No.	%		
PPH	5	5.0	0	-	5	2.5	5.128	0.024
Local Sepsis	9	9.0	2	2.0	11	5.5	4.714	0.030
Retained Placenta	5	5.0	3	3.0	8	4.0	0.521	0.470
Breast Engorgement	5	5.0	0	-	5	2.5	5.128	0.024
UTI	8	8.	4	4.0	12	6.0	1.418	0.234
Fever	4	4.0	3	3.0	7	3.5	0.148	0.700
Psychosis	1	1.0	1	1.0	2	1.0	-	-

According to puerperal complications PPH, local sepsis and breast engorgement were found to be more in study groups than that of control group and this difference was found statistically significant ($P < 0.05$).

Discussion

In our study youngest mother was of 17 years. Most mothers belonged to 19 years (73%). In adult primigravida commonest age group is between 23-25 years (42%). It is comparable with Pal et al¹³ study (1997) which showed similar results.

Our study highlights, majority of patients were of low socio-economic status in teenage group that is lower (21%), upper lower (36%), lower middle (43%), as compared to control group lower (3%), upper lower (22%), lower middle (7%), upper middle (68%). This study was comparable with Pal et al (1997) and Watcharaseranee et al⁹ and Pushpa et al¹⁰. It prevents them to take benefit from available facilities.

Our study highlights, majority of teenage mothers were illiterate (45%), where as in control group they belonged to higher educational studies

like primary (35%), middle (24%), secondary (9%) and graduate (3%). This study was comparable with Pal et al (1997) and Watcharaseranee et al⁹ and Pushpa et al¹⁰. It indicates lack of maturity in teenage mothers.

Our study shows majority of study group is from rural area (73%) that of compared to adult group (49%) similar results were drawn from Mahavarkar et al¹¹ study. Teenage marriages are still prevalent in rural areas.

Analysis of antenatal care showed that 51% of mothers were unbooked and 49% were booked where as majority of the control group mothers were booked, this is due to lack of maturity and education. This is comparable to other studies where booked patients in Dutta et al¹² is 61.25%, Pal et al¹³ 40%. Early booking and regular antenatal care should be provided.

In our study majority of the women in teenage group were anemic. Anemia was present in 59% of teenage mothers and 19% in adult mothers. In teenage mothers 43%, 38% and 13% had mild, moderate and severe anemia respectively which is comparable to previous studies like Dutta et al¹² 68.75%, Rashmi et al¹⁴ 79.2%, Shravage et

al¹⁵ 84.2%,. Anemia is the most common complication in the present study. To counter this problem proper implementation of programs like anemia Mukth Bharat and FOGSI 12 by 12 is essential.

In our study antenatal complications like anemia 59%, eclampsia 10%, GHTN 12%, found to be more in teenage group that of control group anemia 19%, eclampsia 2%, GHTN 9%. Similar findings were obtained in Kumar *et al*⁸, Gazala *et al*¹⁶, Sarkar *et al*¹⁷.

Present study showed higher incidence of low birth weight babies (<2500gms) born to teenage primigravidae (39%) as that of control group is 10%. The similar results shown by other studies like I Dutta *et al*¹²(2013) 25% , Rashmi *et al*¹⁴(26.9%, Gazala *et al*¹⁶(2014) 27.4%. Other neonatal complications like birth asphyxia, RDS and neonatal admission in teenage pregnancy were more than that of adult pregnancy. Similar results were seen with I Dutt *et al*¹²(2013).

In our study, in study group local sepsis 9%, UTI 8%, PPH, breast engorgement, retained placenta each 5% found to be more than that of control group being 2%, 4% and 0% respectively.

Conclusion

Teenage is considered a “high risk group” in reproductive terms because of the double burden of reproduction and growth during this period. Early age at marriage is one of the determinants of teenage pregnancy in our country.

There is increase in both maternal complications like Anemia, Pre eclampsia, Intra uterine growth restriction, Still births, Preterm deliveries and fetal complications like Low birth weight babies, Respiratory distress syndrome, Perinatal mortality and Birth asphyxia in teenage pregnancy. Therefore Adolescent pregnancy should be discouraged by increasing the age at marriage and providing them quality education, helping in building self confidence and educating

the young girls regarding marriage, safe sex, safe motherhood and contraception.

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