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Research Article

Obstetric outcome of teenage pregnancy in comparison with pregnant women of 20-29 years: a retrospective study

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ABSTRACT

Background: Adolescent pregnancy also called as teenage pregnancy is a major public health problem worldwide. Adolescence is defined by WHO as a period from 10-19 years. Adolescent pregnancy results from a number of factors like early marriage, lack of education, premarital sexual relations and lack of awareness regarding contraception. The impact of adolescent pregnancy on the teenager and her future generation is disastrous. This includes obstetric complications like anemia, hypertensive disorders, preterm labour, still births and low birth weight babies. The objective of the present study was to compare the obstetric outcome of teenage pregnancy with that of pregnant women of 20-29 years age group.

Methods: This was a hospital based retrospective case-control study conducted in a tertiary care teaching hospital in North Kerala from January 2013 to June 2013. Data collection was done from hospital records. The next delivery belonging to 20-29 years age group entered in parturition register after a teenage delivery was taken as control after satisfying inclusion and exclusion criteria. The obstetric outcome was recorded and analysed.

Results: The incidence of teenage pregnancy during the study period was 8.48%. 90.89% of teenage pregnant women were primigravidae. 40.7% were anaemic, 18.22% had preterm labor, 14.87% had preeclampsia and 29.5% of the babies had low birth weight.

Conclusions: Teenage pregnancy continues to be a major public health problem in India. The young age structure of Indian population favours more number of adolescents in the country. Preventing early marriages and delaying the onset of child bearing may go a long way in decreasing the number of teenage pregnancies.

Keywords: Adolescence, Teenage pregnancy, Adolescent pregnancy

INTRODUCTION

Adolescent pregnancy is a major public health problem worldwide. Adolescence is defined by WHO as a period from 10-19 years.¹ During this period, the structural, functional and psychosocial development occurs in a girl and prepares her for motherhood. According to WHO report-2005, one woman dies every minute due to pregnancy and childbirth related complications.² This figure will definitely increase when a teenage girl

becomes pregnant. The incidence of adolescent pregnancy in developing countries is about 19% with 3% pregnancies occurring before 15 years of age. The greatest incidence is in sub Saharan Africa followed by South Asia.

The factors leading to a teenage pregnancy are different in the Western world and in India. In the Western world, it is mainly because of lack of education, premarital sexual relations, and lack of awareness regarding

contraception. But in India, teenage pregnancy is mostly because of early marriages and early child bearing.

Whatever be the cause, the impact of teenage pregnancy is on the teenage girl and her future generations. Teenage pregnancy affects the education of the girl child. Better education and a delay in family formation would give her better opportunities for skill development. Mothers with less education are less likely to educate their children. Teenage girls often get pregnant with older husbands. This large spousal age gap facilitates power-differentials between the girl and her partner. Teenage mothers are at increased risk of pregnancy complications like anaemia, hypertensive disorders and preterm labour. Inadequate antenatal care, lack of education and poor socioeconomic conditions also affect the outcome.³⁻⁵ Also there is increased risk of low birth weight babies, still births and perinatal deaths.⁶⁻⁸ Unmarried teen mothers are at increased risk of HIV and other sexually transmitted diseases.

According to UNFPA, the number of adolescent or teenage pregnancy depends on the extent of adolescent population in the world. The total population of adolescents will increase from 1.2 billion to 1.3 billion from 2010 to 2030, inspite of forecasted declines in fertility. By 2030, 15% of the female population worldwide will be represented by adolescents.⁹

Childmarriage and early confinement are well accepted custom in India. Poverty and ignorance magnifies this problem to a greater extent.¹⁰ According to National Family Health Survey-3, the incidence of teenage pregnancy in India was 16%, with majority of them occurring in uneducated rural population. But in Kerala, the teenage pregnancy rate was 5.8%.¹¹ Inadequate utilization of antenatal care facilities by these teenage mothers could be a major determinant in poor obstetric outcome.¹²

The present study was conducted in a tertiary care teaching hospital in North Kerala to compare the obstetric outcome between teenage pregnancies and pregnancies in mothers of 20-29 years age group.

METHODS

This was a hospital based retrospective case-control study conducted in the Department of Obstetrics and Gynaecology in a tertiary care teaching hospital in North Kerala, from January 2013 to June 2013. The aim of the study was to assess the obstetric outcome of teenage pregnancy and to compare it with that of the control group.

The study group comprised of all teenage pregnant ladies admitted to the hospital during the study period. This included teenage patients admitted for medical termination of pregnancy, first and second trimester abortions and for delivery.

The control group comprised of gravida matched pregnant ladies of 20-29 years age group, delivered in the same hospital during the same period. An equal number of patients were selected as controls and to avoid selection bias, patients having the next entry in parturition register following a teenage pregnancy were selected. This group was chosen as control group because, adverse outcomes were expected to be least in this group.¹³ Candidates having major illnesses prior to pregnancy which could affect the outcome of pregnancy like heart disease, hypertension, diabetes mellitus and hypothyroidism were excluded from the study.

The complications and the outcome of the study group was analysed and the results were compared with that of the control group.

Data collection was done from the hospital-records. The history included marital and obstetric history. Investigation results and treatment history were analysed. The maternal complications, mode of delivery and details of the baby were documented.

The major complications analysed were anemia, pre eclampsia, preterm labour and low birth weight. Anemia was defined as a hemoglobin level below 10 gm% in the last trimester of pregnancy. Preeclampsia was defined as BP >140/90 on two occasions 4-6 weeks apart after 20 weeks of gestation, associated with proteinuria. Preterm labour was defined as delivery before 37 weeks of gestation. Low birth weight was defined as baby weight less than 2500 gm.¹³

Data analysis was done using SPSS software. Data was expressed as frequencies and percentages and was analysed by Chi square test for significance. Relative risk and 95% confidence interval for relative risk was calculated. A p value of <0.05 was considered to indicate statistical significance.

RESULTS

The total number of obstetric patients admitted to the hospital during the study period was 6660, of which 565 were teenagers, contributing to a teenage pregnancy rate of 8.48% (Table 1).

Table 1: Incidence of teenage pregnancy.

Admissions	Number	Percentage
Total No. of obstetrics admissions	6660	100
Total No. of teenage pregnancies	565	8.48%

Only 2 of them were unmarried. All patients in control group were married (Table 2).

Out of 565 teenagers, 20 suffered 1st trimester abortion, 4 had 2nd trimester abortion, 1 underwent 1st trimester MTP

and 2 patients underwent 2nd trimester MTP. The rest 538 teenagers were admitted for delivery. They were compared with 538 gravida-matched controls of 20-29 years age group (Table 3).

Table 2: Distribution according to marital status.

Marital status	Number	Percentage
Married	563	99.65%
Unmarried	2	0.365%
Total	565	100%

Table 3: Distribution according to termination of pregnancy.

Termination of pregnancy	Number	Percentage
1 st Trimester abortion	20	3.54
2 nd Trimester abortion	4	0.71
1 st Trimester MTP	1	0.17
2 nd Trimester MTP	2	0.35
For delivery	538	95.22
Total	565	100%

So 538 teenage patients delivered during study period and were further analyzed and compared with control group.

489 patients in each group were primigravidae (90.89%), 45 were the second gravidae and 4 were the third gravidae (Table 4).

Table 4: Distribution according to parity.

Parity	Number	Percentage
Primigravida	489	90.89%
Secondgravida	45	8.36%
3 rd gravida	4	0.74%
Total	538	100%

Majority of teenage patients were 19 years old (67.96%) (Table 5).

Table 5: Distribution of teenagers according to age.

Age	Number	Percentage
16	2	0.35
17	6	1.06
18	73	30.62
19	384	67.96
Total	565	100%

The majority of teenage patients were 19 years old (67.96%).

The most common complications in both the groups were anaemia and preeclampsia. The relative risk for anaemia in teenager was 1.97 (1.62-2.4) which was statistically significant with a p value <0.0001.

For preeclampsia, teenager had a relative risk of 2.76 (1.64-4.15), p value <0.0001 (Table 6). When comparing Hb levels less than 10 gm% with Hb >10 gm%, teenager had a relative risk of 1.38 (0.93-2.03) for having anaemia (p 0.133). None of the subjects in both group had severe anemia (Table 7).

Table 6: Distribution according to antenatal complications.

Antenatal complications	Study group		Control group	
	No.	%	No.	%
Anaemia	219	40.7	111	20.63
Preeclampsia	80	14.87	29	5.39
Eclampsia	4	0.74	3	0.55
PROM	35	6.50	36	6.69
IUGR	32	5.94	21	3.90
Abruption	4	0.74	5	0.93
Malpresentation	15	2.78	16	2.97
Multiple pregnancy	8	1.48	9	1.67
GDM	6	1.11	12	2.23

Table 7: Distribution according to haemoglobin level.

Hb level	Study group		Control group	
	No.	%	No.	%
<7	0	0	0	0
7-9	55	10.22	40	7.43
9-10	164	30.48	71	13.20
>10	319	59.29%	427	79.37%
Total	538	100%	538	100%

18.22% in study group and 13.38% in control group had preterm labour; p value 0.037. Teenager had a relative risk of 1.36 (1.03-1.8) for having a preterm delivery (Table 8).

Table 8: Distribution according to gestational age at delivery.

Gestational age	Study group		Control group	
	No.	%	No.	%
<37 weeks	98	18.22	72	13.38
37-40 weeks	370	68.77	424	78.81
>40 weeks	70	13.01	42	7.81
Total	538	100%	538	100%

22.67% in study group and 24.53% in control group had caesarean section (Table 9).

118 pregnant teenagers and 120 control underwent primary CS. (Table 10).

Commonest indication for CS in both group were fetal distress, cephalopelvic disproportion and failed induction (Table 11).

Table 9: Distribution according to obstetric outcome.

Obstetric outcome	Study group		Control group	
	No.	%	No.	%
Preterm labour	98	18.22	72	13.38
CS	122	22.67	132	24.53
VE	13	2.41	229	4.08
Twin delivery	8	1.48	9	1.67
IUD	5	0.92	1	0.18
FTND	292	54.27	302	56.13
Total	538	100%	538	100%

Table 10: Distribution of CS according to type.

Type of CS	Study group	Control group
Primary CS	118	120
Repeat CS	4	12
Total	122	132

Table 11: Distribution according to major indications for CS.

Indication for CS	Study group	Control group
Fetal distress	36	30
CPD	26	24
Failed induction	24	21

29.49% in study group and 18.82% controls gave birth to low birth weight babies. The relative risk was 1.57 (1.26-1.95), p value of <0.0001 (Table 12).

Table 12: Distribution according to birth weight.

Birth weight (kg)	Study group		Control group	
	No.	%	No.	%
<1.5	28	5.13	19	3.47
1.5 – 1.99	52	9.52	41	7.50
2 – 2.49	81	14.84	43	7.86
LBW babies	161	29.49%	103	18.83%
>2.5	385	70.51%	444	81.17
Total	546	100%	547	100

DISCUSSION

Adolescent pregnancy continues to be a major public health problem in India. In our study, we got the incidence of teenage pregnancy as 8.48% which was comparable to the incidence noted by Rajoriya M et al. (2.5%), Yasmin G et al. (5.1%), Dubashi (4.5%), Ambedkar (3.94%) and Mamatha (10%). But Prachi Saurabh Koranne et al. got an incidence of 24.17%.¹⁴⁻¹⁹

99.65% of the teenagers in the present study were married, reflecting the tendency for early marriages in our part of the world. Studies by Yasmin G, Mulahopadhyay,

Mamatha and Dharmendra Raut showed similar results.^{20,21}

90.89% of teenagers in our study were primi gravidae. Rajoriya M, Yasmin G, Prachi Saurabh Koranne and Mamatha got the same observation.

78.9% of our teenagers were Muslims, as Muslims are a majority here and they practice early marriages. But Yasmin G and Dharmendra Raut observed more Hindu teenagers in their study - 64% and 60% respectively.

40.7% of our teenagers were anemic. Other studies showed the incidence of anemia ranging from 22-75%.^{22,23}

We found 14.87% preeclampsia in our teenagers, other studies showed an incidence of 7-32%.²⁴

18.22% of our teenagers delivered preterm, which was comparable to the findings of Rajoriya M (13%), Mamatha (12.5%) and Kavitha N. Singh (7.14%). Anemia, preeclampsia and poor socioeconomic status would be the reason for preterm delivery. Prachi Saurabh Koranne got an incidence of 54.35% - much higher than other studies.

In our study, 22.67% of teenagers underwent LSCS, the commonest indication being fetal distress followed by CPD. As the teenagers are still in the growing stage, inadequate growth of the pelvic bone could be the reason for CPD and fetal distress.

We found that 29.49% of babies born to teenagers were LBW, but other studies showed a much higher incidence of 39-65%. Poor antenatal care, preeclampsia, IUGR, low socioeconomic status and spontaneous or induced preterm labour could be the cause of LBW babies.

CONCLUSION

Adolescent pregnancy and its associated complications are a matter of concern in developing countries. Adolescent pregnancy can result from unwanted fertility at an early age or due to young age structure of population. In India, the population growth is mainly due to the current age structure. The existing young age structure will be responsible for 33.6% of population growth from 2010-2050. This young age structure is not amenable to modification. Also child marriage and adolescent pregnancy are well accepted in India. Law permits the marriage of a girl only after the age of 18. By encouraging delayed marriages, delayed child bearing and wider spacing between births, communities and families can contribute to a healthier population. Girls should be well educated and empowered to take decisions, so that they can transform their own lives and live with dignity.

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