Original Research Article

Maternal outcome in teenage pregnancy

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A R T I C L E   I N F O

A B S T R A C T

Introduction: Teenage pregnancy due to changing social condition, it's a important to study the implication of the maternal and fetal health. It is a serious health problem, more so in developing countries like India. Young mother and new born are at increased risk of anaemia, preeclampsia, increased rate of LSCS, PTVD, LBW, prematurity, NICU care, RDS, sepsi, IUGR. Hence study is directed to identify the problems and their outcome.

Aim and Objective: study the epidemiological aspects and clinical maternal outcome in teenage pregnancy.

Materials and Methods: Teenage pregnant ladies between 18 to 20 years were taken up for the study. 100 cases were taken for the study at Index Medical College, Indore and compared with 100 cases of ad ult women aged between 21 to 32 years. All the cases were included in the study, irrespective of their booking and unbooking statuses after 28 weeks of pregnancy are taken.

Result: Among 100 cases of pregnancy, 67% of teenage mothers have varying grades of anaemia, 12% had preterm deliveries, 1% women had preeclampsia, 3% had eclampsia. Among all of these 8.5% requiring NICU care and 1% were perinatal death due to prematurity, respiratory distress, sepsis.

Conclusion: As teenage pregnancy is associated with high risk of anaemia, preeclampsia, eclampsia, PTVD, high rate of LSCS, prematurity, low birth weight, perinatal death. It's important to reduce the teenage pregnancy by improving the socioeconomic condition, education, public awareness, strict implementation of law, good ANC care, nutrition, acess to contraceptive services, sex education.

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1. Introduction

Adolescent pregnancy has become important health issue in both developed and developing countries in recent decade.[1] World health organization defines Teenage Pregnancy as " any pregnancy in a girl who is 10-19 years of age," the age being defined as her age at the time the baby is born.[2] In all over the world and more in developing countries like in India adolescent pregnancy is on rise, emerging as serious problem. Teenage pregnancy is not limited to any social, economic, racial or ethnic groups.[3] In developing countries illiteracy and poverty but in developed countries decreasing age of menarche are the reasons for increasing incidence of adolescent pregnancy.

Teenage pregnancy is a worldwide social problem. Between the age of 15 and 19 years an estimated 16 million girls give birth every year, 95% of these births occurring in developing countries. This number represents 11% of all births worldwide. India, Bangladesh, Brazil, the Democratic Republic of the Congo, Ethiopia, Nigeria and the United States of America are the seven countries account for half of all adolescent births.[4]

In India incidence of teenage pregnancy is 2 women out of every 1000 pregnancies.[5] In our country 47.4% of girls and in Madhya Pradesh 34.1% of girls are married before the age of 18 years.[6]Majority of the couples are unaware of contraception, do not use it, there is a high unmet need of contraception. Being a motherhood women should be emotionally strong and physically mature but adolescent girl is not yet mature, so that adolescent pregnancy and childbirth carry more

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risk than adults pregnancy. In adolescents underdeveloped pelvis makes them prone to have CPD and endup in cesarean delivery. Growing periods are continue still in the girls. Baby with low birth weight, inadequate nutrition and anaemia are more likely to have in teenage mothers. Prematurity predisposes such children to several infant and childhood disorders increased risk of mortality and morbidity. Psychosocial development of the infant can be effected by early motherhood. Adolescent mothers have increased occurrence of developmental disabilities and behavioural issues in born children. Adolescent girls have increased risk of maternal mortality as compared to older women. In unmarried teenage girls pregnancy is not only creates social problem but there is a high risk of unsafe abortion. In low and middle income countries 15% of all unsafe abortions are among adolescent girls aged 15-19 years.[7]

Teenage pregnancy have adverse maternal outcome that includes preterm labour, anaemia, hypertensive disorders of pregnancy, urinary tract infection, abortion, sexually transmitted diseases, HIV, malaria, obstetric fistulas, puerperal sepsis, mental illness and high rate of cesarean section for cephalopelvic disproportion and foetal distress with adverse maternal outcome.

2. Aim and Objective:

2.1. Aim

The study on "Feto-Maternal Outcome in teenage pregnancy at a tertiary health center of central India" has been done to improve the awareness and implementation of antenatal services and with aim to have healthy mother and healthy baby.

2.2. Objective

To asses maternal outcome in adolescent and young adult pregnant women.

To evaluate the complications associated with teenage pregnancy.

To evaluate the incidence of intervention, induction of labour, instrumental or operative delivery.

3. Materials and Methods

The present study entitled " Maternal Outcome in teenage pregnancies" was conducted in the department of Obstetrics and Gynaecology, Index Medical College Hospital & Research Centre. Indore, (M.P) during a period of January 2017 to January 2018. This was a Cross-sectional comparative study. The patients selected from OPD in Obstetrics and Gynaecology Department.

3.1. Sample Size

Total 200

Group I (teenage group) 100 women were included in the age of 19 years or less at the time of delivery.

Group II (Adult group) 100 women were included, aged more than 19 years to 32 years at the time of delivery.

3.2. Inclusion criteria

1. Primigravidae.
2. Gestational age >28 years.
3. Women without complications during pregnancy and labour.

3.3. Exclusion criteria

1. Age: less than 13 yrs. or more than 32 yrs.
2. Pre-existing medical disorders during pregnancy such as; Diabetes (DM), Hypertension (HTN), bronchial Asthma, Rh –ve mother and other chronic diseases affecting the pregnancy
3. Having special habits like drug abuse, alcoholic, or smoking
4. History of medications like corticosteroid therapy, antiepileptics, anticonvulsants, antipsychotics-band other teratogenic drugs, etc which may affect pregnancy outcome.
5. Unreliable age unreliable menstrual dating and Missing of information.
6. Congenital malformation in fetus/neonates and multiple pregnancies.

Investigations included complete blood examinations, group Rh, serology for HIV, HbsAg, VDRL, urine analysis, RBS and urea. To detect presentation and pregnancy related complications follow up during pregnancy should be done. Special attention was given for presence of pallor, oedema, pulse, BP, weight, height in general examination.

3.4. Statistical analysis

Mean, standard deviation of the parametrical data was calculated and significance of difference in the change in mean was calculated by using Independent Samples t-tests. The non-parametrical data were processed for frequency and % distribution. Chi square test was computed to find out significance of difference in the frequency distribution of subjects among different attributes. A probability (p value) of <0.05 was considered to be statistically significant.

4. Observations and Result

Out of 100 cases in study group 59% were from rural area and 41% from urban area, while in control group 54% and 46% were from rural area and urban area respectively. Hence the residential status is comparable in both the groups.

Pearson Chi-Square = 2.922, df = 1, p value = .087

Table 1: Distribution of women according to socio-economic status

Socio-economicStatus As per K. S. class.	Study Group (n=100)		Control Group (n=100)	
	No.	%	No.	%
Lower	50	50%	38	38%
Middle	50	50%	62	62%
Lower Middle	36	36%	45	45%
Upper Middle	8	8%	13	13%
Middle	6	6%	4	4%
Total	100	100%	100	100%

Above table shows that, in study group 50% adolescent women belong to low SES, 50% to middle SES. While in control group majority (62%) of adult women were from middle SES and 38% were from lower class. None of the cases were from upper class.

Above table shows that, 30% of teenage women in study group and 48% of adult women in control group were illiterate. 29% cases in group 1 and 32% cases in group 2 were studied upto primary school. 35% adolescents were studied upto middle school and only 6% studied upto higher secondary while 13% cases of adult primigravidae were studied upto middle school and 7% upto higher secondary. None of case were graduate. On analysis the data is significant.

Above table shows that; in control group 71% women had >3 ANC visits and 29% women had late 1st or <3 ANC visits and in study group 62% cases had late 1st or <3 ANC visits and 38% adolescents had > 3 ANC visits. On analysis data is significant.

The mean ANC visit in study group was 2.41±0.986 and in control group it was 2.85+_0.892, the difference was found to be statistically significant, with more ANC visits in control group in comparison to study group.

In study group 83% cases into labour spontaneously out of which 54% cases had vaginal delivery and 29% underwent to LSCS. 9% cases of pregnant adolescent were induced, 6% had vaginal delivery and 3% cases were converted to emergency LSCS.

In control group 88% case were in labour spontaneously, out of those 62% cases and 26% cases had vaginal delivery and LSCS respectively. Induced labour were in 8% cases of adult women, in which 7% cases had vaginal delivery and 1% case had converted to emergency LSCS.

Above table shows that, the incidence of vaginal delivery was higher in present study. In the study group 60% had vaginal delivery and 40% had cesarean section. Out of 60% vaginal delivery, 46% cases had full term vaginal delivery, 12% and 2% cases had preterm vaginal delivery and spontaneous vaginal delivery respectively.

While in control group 69% cases had vaginal delivery and 31% cases underwent to LSCS. In adult group 61% cases had full term vaginal delivery. Preterm vaginal delivery and spontaneous vaginal delivery had in 7% and 1% cases respectively. 1% cases had instrumental delivery.

Above tables shows that, cephalopelvic disproportion (52.5%) and foetal distress (15%) were the most common indication of LSCS in study group. 7.5% cases underwent for LSCS due to failed induction of labour. 10% cases had MSL, APH were as the indication of LSCS in 5% of cases. Malpresentation, obstructed labour and dystocia each had in 2.5% of cases of LSCS.

While in control group 35.5% cases of LSCS had foetal distress and CPD was the indication of LSCS in 29% of cases. LSCS due to MSL had in 19.4% of cases. 3.2% cases had failed induction. Severe oligohydramnios had in 6.5% of cases. APH and Malpresentation each had in 3.2% of cases.

Above tables shows that, most of the pregnant adolescents (67%) in study group were anaemic, 3% cases had eclampsia, 2% cases had abruption placentae. Preeclampsia and oligohydramnios each had in 1% cases. Preterm labour and premature rupture of membrane were the maternal complication in 18% of cases.

Adult pregnant women had 36% cases of anaemia, 7% cases of premature rupture of membrane, 5% cases of preterm labour, 2% cases of eclampsia. Abruptio placentae and placenta previa each had in 1% of cases.

In study group 3% cases had primary PPH. Perineal tear and UTI each had in 4% of cases. Retained placenta, puerperial sepsis, puerperal psychosis each had in 1% of cases. In control group 2% cases and 3% cases had PPH and perineal tear respectively. Puerperial pyrexia and urinary tract infection had in 1% and 5% cases respectively.

5. Discussion

About one third of women in India are married by the age of 15 years and two third by 18 years of age. The median age at first birth is 19.6 years (NFHS-4, 2015-16). Thus, half of all women experience childbirth by the**- time they are 19 years, usually before physical maturity is obtained. In Madhya Pradesh age at marriage is steadily increasing and percent of women marrying below 18 years of age has fallen from 75% to 30%. NFHS-4 records that 30% of all women, 35.8% of rural women and 16.6% of women married before 18 years.

The present study is similar to Kanti Meherda, Shikha Mathur[8] (2017) study : It is revealed that most of the

Table 2: Distribution of women according to educational status

Educational Status	Study Group (n=100)		Control Group (n=100)	
	No.	%	No.	%
Illiterate	30	30%	48	48%
Primary	29	29%	32	32%
Middle School	35	35%	13	13%
Higher Secondary	6	6%	7	7%
Total	100	100%	100	100%

Pearson Chi-Square = 14.462, DF=3, p value =.002

Table 3: Distribution of women according to booking status

Antenatal Care	Study Group (n=100)		Control Group (n=100)	
	No.	%	No.	%
Booked cases ($\geq$ 3 ANC visits)	38	38%	71	71%
Unbooked cases (Late 1st or < 3 ANC visits)	62	62%	29	29%
Total	100	100%	100	100%
Mean±SD	2.41± .986		2.85± .892	
' t ' value P value	-3.310.001			

Unpaired 't' test applied. P value < 0.05 was taken as statistically significant.

Table 4: Distribution of women according to mode of delivery

Mode of Delivery	Study Group (n=100)		Control Group (n=100)	
	No.	%	No.	%
Vaginal Delivery	60	60%	69	69%
Full term vaginal delivery	46	46%	60	60%
Preterm vaginal delivery	12	12%	7	7%
Spontaneous Vaginal Delivery (SB)	2	2%	1	1%
Instrumental Delivery	0	0%	1	1%
Cesarean Section	40	40%	31	31%
Total	100	100%	100	100%

Pearson Chi-Square =5.639, df = 4, p value =.228

Table 5: Distribution of patients according to indication of LSCS

Indication of LSCS	Study Group (n=40)		Control Group (n=31)	
	No.	%	No.	%
CPD	21	52.5%	9	29%
FD +/- MSL	10	25%	17	55%
Failed induction	3	7.5%	1	3.2%
S. Oligohydramnios	1	2.5%	2	6.5%
APH	2	5%	1	3.2%
Malpresentation	1	2.5%	1	3.2%
Obstructed Labour & Dystocia	2	5.0%	0	0%
Total	40	100%	31	100%

Pearson Chi-Square = 10.909, df = 7, p value =.143

Table 6: Distribution of women according to maternal complication

Type of Complication	Study Group (n=100)		Control Group (n=100)	
	No.	%	No.	%
Anaemia	67	67%	36	36%
Eclampsia	3	3%	2	2%
Preeclampsia	1	1%	0	0%
Abruptio Placentae	2	2%	1	1%
Placenta Previa	1	1%	1	1%
Preterm Labour	9	9%	5	5%
Premature rupture of membrane	9	9%	7	7%
Oligohydramnios	1	1%	2	2%
Total	93	93%	54	54%

subjects 64% in study group had < 3 ANC visits while in control group most of the subjects had > 3 ANC visits. The difference in antenatal registration is highly significant (p value < 0.001).

As per study Seneesh KV and Shah M[9] (2015) 27.1% cases never taken antenatal care in study group and in control group 5.7% case were never taken ANC care. Regularity of ANC had been in 35.7% cases in study group and 62.9% cases in control group. In the present study incidence of vaginal delivery were close to finding of Dr Rajal V Thaker[10] 2012 study in which 65.6% cases had vaginal delivery and 31.3% cases had LSCS in adolescent pregnant women.

Priyanka Mukhupadhyay[11] 2010 study found that 65.7% cases had vaginal delivery, 27.7 cases had preterm vaginal delivery, 28.3% cases went to LSCS in adolescent group. In adult primigravidae 61.4% cases had vaginal delivery, 13.1% cases had preterm vaginal delivery and 36.9% cases went for LSCS.

6. Conclusion

Marriage law enforced by Government of India with the increasing (18 years) the age of marriage franchised in teen age girls, has mostly solved many maternal and perinatal problems related to young teenage primigravidae.

Present study significantly revealed that teenage primi were more between 18-19 years of age, poor, uneducated, housewives, from rural area lacked in reproductive awareness regarding use of contraception, falls pray to unintended pregnancy and early ANC booking. Above said adverse factors influence the outcome of teenage pregnancy as increased chance of operative deliveries due to cephalopelvic disproportion and so also delivery of small for gestation age babies were increase in teenage pregnancies.

Therefore the periodic information, education and communication activities have to be held at villages and people, principally elders, need to be told about complications and ill effect of teenage pregnancy, in order to improve the health of the adolescents.

7. Source of funding

None.

8. Conflict of interest

None.

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