Original Research Article

Maternal outcome in teenage pregnancy

Pooja Jain1,*, Meenakshi Gupta1

1Dept. of Obstetrics and Gynaecology, Index Medical College Hospital & Research Center, Indore, Madhya Pradesh, India

A R T I C L E   I N F O

Article history:
Received 24-12-2018
Accepted 03-07-2019
Available online 12-09-2019

Keywords:
PTVD- preterm vaginal delivery
LSCS- lower segment caesarean section

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, sepsis, 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, access to contraceptive services, sex education.

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
iliteracy 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
risk than adults pregnancy. In adolescents underdeveloped pelvis makes them prone to have CPD and end up 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. 

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.

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

<table>
<thead>
<tr>
<th>Socio-economic Status As per K. S. class.</th>
<th>Study Group (n=100)</th>
<th>Control Group (n=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Lower</td>
<td>50</td>
<td>50%</td>
</tr>
<tr>
<td>Middle</td>
<td>50</td>
<td>50%</td>
</tr>
<tr>
<td>Lower Middle</td>
<td>36</td>
<td>36%</td>
</tr>
<tr>
<td>Upper Middle</td>
<td>8</td>
<td>8%</td>
</tr>
<tr>
<td>Middle</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

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 up to primary school. 35% adolescents were studied up to middle school and only 6% studied up to higher secondary while 13% cases of adult primigravidae were studied up to middle school and 7% up to 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 anemic, 3% cases had eclampsia, 2% cases had abortion 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, puerperal sepsis, puerperal psychosis each had in 1% of cases. In control group 2% cases and 5% cases had PPH and puerperal tear respectively. Puerperal 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 (2017) study : It is revealed that most of the
Table 2: Distribution of women according to educational status

<table>
<thead>
<tr>
<th>Educational Status</th>
<th>Study Group (n=100)</th>
<th>Control Group (n=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Illiterate</td>
<td>30</td>
<td>30%</td>
</tr>
<tr>
<td>Primary</td>
<td>29</td>
<td>29%</td>
</tr>
<tr>
<td>Middle School</td>
<td>35</td>
<td>35%</td>
</tr>
<tr>
<td>Higher Secondary</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

Table 3: Distribution of women according to booking status

<table>
<thead>
<tr>
<th>Antenatal Care</th>
<th>Study Group (n=100)</th>
<th>Control Group (n=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Booked cases (≥ 3 ANC visits)</td>
<td>38</td>
<td>38%</td>
</tr>
<tr>
<td>Unbooked cases (Late 1st or &lt; 3 ANC visits)</td>
<td>62</td>
<td>62%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Mean±SD 2.41±.986 2.85±.892

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

Table 4: Distribution of women according to mode of delivery

<table>
<thead>
<tr>
<th>Mode of Delivery</th>
<th>Study Group (n=100)</th>
<th>Control Group (n=100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal Delivery</td>
<td>60</td>
<td>60%</td>
</tr>
<tr>
<td>Full term vaginal delivery</td>
<td>46</td>
<td>46%</td>
</tr>
<tr>
<td>Preterm vaginal delivery</td>
<td>12</td>
<td>12%</td>
</tr>
<tr>
<td>Spontaneous Vaginal Delivery (SB)</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Instrumental Delivery</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Cesarean Section</td>
<td>40</td>
<td>40%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

Table 5: Distribution of patients according to indication of LSCS

<table>
<thead>
<tr>
<th>Indication of LSCS</th>
<th>Study Group (n=40)</th>
<th>Control Group (n=31)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>CPD</td>
<td>21</td>
<td>52.5%</td>
</tr>
<tr>
<td>FD +/- MSL</td>
<td>10</td>
<td>25%</td>
</tr>
<tr>
<td>Failed induction</td>
<td>3</td>
<td>7.5%</td>
</tr>
<tr>
<td>S. Oligohydramnios</td>
<td>1</td>
<td>2.5%</td>
</tr>
<tr>
<td>APH</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>Malpresentation</td>
<td>1</td>
<td>2.5%</td>
</tr>
<tr>
<td>Obstructed Labour &amp; Dystocia</td>
<td>2</td>
<td>5.0%</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100%</td>
</tr>
</tbody>
</table>

Pearson Chi-Square = 10.909, df = 7, p value = .143
Table 6: Distribution of women according to maternal complication

<table>
<thead>
<tr>
<th>Type of Complication</th>
<th>Study Group (n=100) No.</th>
<th>%</th>
<th>Control Group (n=100) No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anemia</td>
<td>67</td>
<td>67%</td>
<td>36</td>
<td>36%</td>
</tr>
<tr>
<td>Eclampsia</td>
<td>3</td>
<td>3%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>1</td>
<td>1%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Abruptio Placenta</td>
<td>2</td>
<td>2%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Placenta Previa</td>
<td>1</td>
<td>1%</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Preterm Labour</td>
<td>9</td>
<td>9%</td>
<td>5</td>
<td>5%</td>
</tr>
<tr>
<td>Premature rupture of membrane</td>
<td>9</td>
<td>9%</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>Oligohydramnios</td>
<td>1</td>
<td>1%</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>93</td>
<td>93%</td>
<td>54</td>
<td>54%</td>
</tr>
</tbody>
</table>

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 M⁹ (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 Thaker¹⁰ 2012 study in which 65.6% cases had vaginal delivery and 31.3% cases had LSCS in adolescent pregnant women.

Priyanka Mukhupadhyay¹¹ 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.

References


Author biography

Pooja Jain Assistant Professor
Meenakshi Gupta Post Graduate Resident