Section: Community Medicine

Original Research Article

FETOMATERNAL OUTCOMES OF ADOLESCENT PREGNANCY: A RETROSPECTIVE CROSS-SECTIONAL STUDY IN A TERTIARY CARE HOSPITAL OF ASSAM, INDIA

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ABSTRACT

Background: Adolescent girls are highly vulnerable group that prone for many health related issues. Adolescent pregnancy is one of most common issues that lead to maternal and fetal morbidity and mortality. **Aims and Objectives**: (a) to study the maternal complications specific to teenage mothers during ante partum, intra partum and postpartum period; (b) to analyse the mode of delivery to know whether caesarean section rate is increased in teenage pregnancy; (c) to study the neonatal outcome in teenage pregnancy; and (d) to analyse the factors contributing to teenage pregnancy.
Materials and Methods: a) Study place: Lakhimpur Medical College and Hospital, North Lakhimpur, Assam b) Study period: 01-01-2024 to 31-03-2024 (three months) c) Study design: Hospital record based retrospective cross-sectional study d) Source of data: This is a hospital record based retrospective cross-sectional study.
Results: In our study it was found that 47.37% pregnant women are in the age group of 19 years, 97.11% women are primi gravida and 52.97 % women are in 39-40 weeks of gestation. 32.6% women have not done ANC. 87.95% women have delivered babies via normal vaginal delivery and 15.28% women have opted for post partum sterilization. In this study it was observed that fetal complication are there after birth out of which 10.02% IUGR, 19.5% LBW babies, 10.07% prematurity, 9.51% respiratory distress, 11.71% neonatal jaundice, 7.98% sepsis, 23.09% NICU/SNCU admission and 5.43% neonatal death. Regarding maternal outcome of adolescent pregnancy, it was found that 44.14% women are moderate anemic while 16.81% women have hypertensive disorders and 2.5% women have ante partum haemorrhage. Regarding post partum complications of pregnant women, it was found that 3.9% women have post partum haemorrhage, 7.47% having fever, 2.72% having urinary tract infection and 2.55% women have local sepsis. 1.19% women got admitted in ICU.
Conclusion: fetal and maternal complications are much more amongst adolescent women. Health education and proper guidance is always necessary to tackle the situation of teenage pregnancy.
Keywords: adolescent pregnancy, delivery, Lakhimpur.

INTRODUCTION

The term “adolescent” refers to individuals between the ages of 10-19 years.[1] An adolescent girl is able to become pregnant following menarche. They make up more than one billion, i.e, nearly one-fifth of the world population, are growing in number, and virtually, and this growth is in developing countries.[2] Adolescent pregnancy are at increased risk for neonatal complications as prematurity, low

birth weight, IUGR, neonatal mortality and still birth.[3] The maternal complications like PIH, preeclampsia, and anemia in pregnancy, perineal tear and episiotomy are also common among adolescents. However, cesarean section (CS), instrumental delivery and premature rupture of membrane. APH and postdated were not found significantly associated with adolescents pregnancy. However, the evidence for major impairment of pregnancy outcome among adolescent female with provision of high-quality maternal care are not found. Though adolescents have more adverse pregnancy outcomes than adult females. Similarly adolescent pregnancy was concerned more as public health issue than clinical practice.[4-5] Adolescent pregnancy is a worldwide problem. Early childbearing, particularly among adolescent has negative demographic, socio-economic and socio-cultural consequences.[2] In South Asia, one out of every five adolescent girls becomes a female before turning 18 years, and in India, around 9% of girls aged 15-19 years get pregnant early and in Assam 11.7% aged 15-19 years are already females.[6-7] Adolescent pregnancies are more prevalent in rural and socioeconomically disadvantaged areas of a country. The study will focus on the pattern of adolescent pregnancy attending Lakhimpur Medical College and Hospital for delivery and fetomaternal outcomes of adolescent pregnancy.

Aim

To identify the pattern of adolescent pregnancy and describe feto maternal outcomes of adolescent pregnancy attending LMCH.

Objective

The aim and objectives of this study were (a) to study the maternal complications specific to teenage mothers during ante partum, intra partum and postpartum period; (b) to analyse the mode of delivery to know whether caesarean section rate is increased in teenage pregnancy; (c) to study the neonatal outcome in teenage pregnancy; and (d) to analyse the factors contributing to teenage pregnancy.

Justification for the Study

Lakhimpur Medical College and Hospital is a newly established tertiary care hospital in this part of Assam. After the establishment of this hospital, the number of patients attending for delivery has increased many fold from Lakhimpur, Dhemaji and Biswanath district of Assam also from neighboring areas of Arunachal Pradesh which has necessitated allocation of various resources to the Obstetrics and Gynecology department. The study on outcome of adolescent pregnancy has not been carried out in this part of Assam till now. Identifying the pattern of adolescent pregnancy will help to understand the burden of adolescent pregnancy in this part of Assam and respective district authority may implement appropriate measures for prevention of adolescent pregnancy. The present study will also help to perceive the fetal and maternal outcome of adolescent pregnancy. The study may also aid in future study on factors associated with adolescent pregnancy and its prevention.

MATERIALS AND METHODS

Study period: 01-01-2024 to 31-03-2024 (three months)

Study design: Hospital record based retrospective cross-sectional study.

Source of data: This is a hospital record based retrospective cross-sectional study. The source of record will be the Labour Room Register and CS OT Register available in the Obstetrics and Gynecology Department where the records are maintained of all pregnant females attending for delivery.

In the present study name of adolescent pregnant female will not be disclosed to anyone at any level and will be kept confidential forever. Only serial number will be assigned to each adolescent pregnant female admitted in the department of O & G, LMCH during the data collection process.

Sample size: Adolescent pregnant females those who delivered at LMCH from 1st January 2021 to 31st December 2023.

Minimum required sample size: In a prospective study of fetomaternal outcome of teenage pregnancy at tertiary care hospital that was conducted in SDMMCH, Sattur, Karnataka in department of OBG over a period of one year January to December 2016 by Rita D et al found 37.6% preeclampsia among teenage pregnant female.[8]

Preeclampsia among teenage pregnant female = 37.6 %

So, p = 0 .376

q= (1-p) = 0.624

pq=0.234624

Considering a confidence level of 95%, Z=1.95

And Margin of error 5%, e= 0.05

Required minimum sample size (n) = z2 pq / e2 = 356.8631 = 360

Minimum 360 numbers of adolescent female will be included in the present study.

Inclusion Criteria: All adolescent pregnant female (10-19 years) who reported to the Obstetrics and Gynecology Department of Lakhimpur Medical College and Hospital for delivery from 01-01-2021 to 31-12-2023 will be included in the study.

All teenage pregnant women aged 13-19 years admitted for delivery in our labour room and data collected from Ante Natal record. Only primigravida is included (Primi>28 weeks till postpartum).

Only singleton pregnancy was included.

Exclusion Criteria: Primigravida 28 weeks not in Labour admitted for other causes. Multigravida, Ante Natal mother above 19 years of age. Women more than 30 years of age and Pregnancy which ended in abortion. Pregnancy with preexisting major medical and surgical illness which could affect the outcome. Adolescent pregnant females those who attended LMCH for delivery but referred to next higher centre before delivery will not be included in this study.

Parameters

The following parameters will be collected for the present study

i) Age/ Religion/LMP/EDD/GPLA/
ii) Previous delivery history and complication
iii) Gestational age in weeks
iv) BP/FHR/Hb%
v) Type of delivery (Normal/ Instrumental/Vacuum/CS)
vi) Outcome of Female (Alive/Maternal Death) and complications
vii) Outcome of the baby (Alive/Still birth/Death), birth weight and Complications
viii) Condition of the female and baby at the time of discharge

Limitation of the study: This will be a record based retrospective study and there will be no interaction with the adolescent pregnant females and collection all details regarding Ante-natal checkups will not be possible.

Statistical Analysis: The data collected from the Registers will be entered into Microsoft Excel 2021. Entered data will be checked for any missing data. Descriptive analysis will be done in SPSS Version 21. Results will be expressed in terms of frequency and percentages. Data will be presented using simple tables and graphs as appropriate.

RESULTS

Table 1: Characteristics of pregnant mother (N= 589)

	Number	Percentage (%)
Age (years)		
14	6	1.02
15	5	0.85
16	14	2.38
17	47	7.98
18	238	40.41
19	279	47.37
Gravida		
Primigravida	572	97.11
multigravida	17	2.89
Period of gestation		
<37 weeks	63	10.7
37-39 weeks	191	32.43
39-40 weeks	312	52.97
40-42 weeks	21	3.57
>42 weeks	2	0.34
Utilization of ANC services during the current pregnancy		
No ANC	192	32.6
1 ANC	148	25.13
2 ANC	107	18.17
3 or more ANC	142	24.1
Mode of delivery		
NVD	518	87.95
LSCS	71	12.05
Utilization of family planning services following delivery		
Post partum sterilization	90	15.28
PPIUCD	51	8.66
NO	448	76.06

Table 2: Fetal outcome of adolescent pregnancy

Gender of newborn		
	Number	**Percentage**
Male	288	48.9
Female	301	51.1
IUGR	59	10.02
LBW	115	19.52
prematurity	63	10.07
Respiratory distress	56	9.51
Neonatal jaundice	69	11.71
Sepsis	47	7.98
NICU/SNCU admission	136	23.09
Neonatal death	32	5.43

Table 3: Maternal Outcomes

Antepartum complications		
Anemia	**Number**	**Percentage**
Mild Anemia (Hb 10.0-10.9 gm/dL)	186	31.58
Moderate Anemia (Hb 7.0-9.9 gm/dL)	260	44.14
Severe Anemia (Hb < 7.0 gm/dL)	6	1.02

Hypertensive disorders	99	16.81
Antepartum haemorrhage	15	2.55
Postpartum complication		
Post Partum Haemorrhage	23	3.9
Post Operative fever	44	7.47
Uti	16	2.72
Local sepsis	15	2.55
Septiisemia	4	0.68
ICU admission	7	1.19

DISCUSSION

In our study it was found that 47.37% pregnant women are in the age group of 19 years followed by 40.41% in the age group of 18 years. 97.11% women are primi gravida and 52.97 % women are in 39-40 weeks of gestation. Regarding utilization of ANC services 32.6% women have not done ANC while 24.1% women have completed 3 or more ANC.

Rudra samar et al. in their study found that Majority of the adolescent mothers numbering 239 were 19 years of age (70.3%) followed by 18 years numbering 86 (25.3%), 17 years numbering 12 (3.5%) and 3 cases (0.9%) were 16 years of age.[9]

Kumar Ashok et al. in their study found that the incidence of teenage deliveries in hospital over last 5 years was 4.1%. Majority of the teenagers were primigravida (83.2% vs. 41.4%, p< 0.01).[10]

87.95% women have delivered babies via normal vaginal delivery while 12.05% have delivered via LSCS. 15.28% women have opted for post partum sterilization while 8.66% women have inserted PPIUCD. (Table 1)

D Rita et al. in their study found that 83% had full term vaginal deliveries and 42.1% had vacuum assisted deliveries, 2 patients had forceps delivery.8

In our study regarding fetal outcome of pregnant women it was found that 51.1% newborn babies are female. In this study it was observed that fetal complication are there after birth out of which 10.02% IUGR, 19.5% LBW babies, 10.07% prematurity, 9.51% respiratory distress, 11.71% neonatal jaundice, 7.98% sepsis, 23.09% NICU/SNCU admission and 5.43% neonatal death. (Table 2)

Rudra samar et al. in their study found that occurrence of hypertensive disorders 32(9.4%) vs 36 (5.3%), p value < 0.01; IUGR 23 (6.7%) vs 11 (1.6%), p value < 0.01; preterm delivery 38 (11.2%) vs 18 (2.6%) p value < 0.01; and full term normal delivery 258 (75.9%) vs 563 (82.7%), (p value < 0.01 in the study group and control group respectively. Low birth weight babies 140 (41.2%) vs 63 (9.3%), p value < 0.01 and NICU admission 20 (5.8%) vs 9 (1.3%), p value < 0.01; were significantly higher in the study group.

Marimuthu Kavitha et al. in their study mentioned that the incidence of teenage pregnancy was 6.74%. In their study 93% of pregnant teenagers were 17-19 years old. Around half had caesarean section. All complications such as anemia, PIH, preterm, low birth weight and post op complications such as local sepsis, mastitis and UTI were increased in teenage group. Most of babies in the study group required NICU admission. Leading causes of admission in NICU were respiratory distress and preterm babies.[11]

D Rita et al. in their study found that neonatal outcome is poor in teenage mothers (10.26%) as compared to adult mothers, low birth weight 12.5% contributing to main morbidity which is significant compared to mothers more than 19 years. 8.4% being NICU admission and 2% being perinatal mortality, which includes still births.[8]

Kumar Ashok et al. in their study found that teenage mothers had increased incidence of low birth weight (LBW) (50.4% vs 32.3%, p< 0.01), premature delivery (51.8% vs 17.5%, p< 0.01) and neonatal morbidities like perinatal asphyxia (11.7% vs 1.9%, p< 0.01), jaundice (5.7% vs 1.2%, p< 0.01) and respiratory distress syndrome (1.9% vs 0.3%, p< 0.05). Teenage pregnancy was also associated with higher fetal (1.9% vs 0.3%, p< 0.05) and neonatal mortality (3.8% vs 0.5%, p< 0.05).[10]

Regarding maternal outcome of adolescent pregnancy, it was found that 44.14% women are moderate anemic while 16.81% women have hypertensive disorders and 2.5% women have ante partum haemorrhage. Regarding post partum complications of pregnant women, it was found that 3.9% women have post partum haemorrhage, 7.47% having fever, 2.72% having urinary tract infection and 2.55% women have local sepsis. 1.19% women got admitted in ICU. (Table 3)

D Rita et al. in their study found that Incidence of anaemia in teenage mothers is more as high as 79.2% and pre-eclampsia contributing to 37% and eclamsia 13.6% which is significantly high compared to adult mothers.[8]

Kumar Ashok et al. in their study found that Complications like pregnancy induced hypertension (PIH) (11.4% vs 2.2%, p< 0.01), pre-eclamptic toxemia (PET) (4.3% vs 0.6%, p< 0.01) eclampsia (4.9% vs 0.6%, p< 0.01) and premature onset of labor (26.1% vs 14.6%, p< 0.01) occurred more commonly in teenagers compared to controls.[10]

CONCLUSION

From the present study it is concluded that adolescent pregnancy had significant number of complications including eclampsia, haemorrhage, sepsis and anemia. Fetal complications are much more in adolescent women including low birth weight babies, prematurity, neonatal jaundice, sepsis and NICU admission. Neonatal mortality is much more amongst

adolescent women. Since adolescent pregnancy is a multifaceted problem, it requires multidimensional approach. Proper health education and counseling of adolescent women are very essential. Government should take necessary initiatives so that we can prevent adolescent pregnancy and reduce morbidities and mortalities.

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