

“A PROSPECTIVE STUDY ON MATERNAL AND FETAL OUTCOME OF ADOLESCENT PREGNANCY AT A TERTIARY CARE CENTRE”

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ABSTRACT

Introduction: More over 20% of the world's population is in the adolescent age range, which is defined as being between 10 and 19 years old. Around 16 million teenage girls give birth each year, or 11.0% of all births worldwide. Pregnancy among teenagers aged 10 to 19 is referred to as adolescent pregnancy. Teenage birth rates are rising, particularly in developing nations where the consequences for their health are worse. Around the world, adolescent moms were responsible for more than 11% of births. Adolescent pregnancy has been linked to medical, social, and economic issues that affect girls, their families, and nations, according to earlier research.

Aims and Objectives: To look into the impact that being pregnant as a teenager has on both the mother and the unborn child. The purpose of this study is to estimate the frequency of pregnancy among teenage girls and to evaluate its effects on those girls (15-19 years). In order to investigate the factors that lead to pregnancy among adolescents. To investigate the challenges associated with pregnancy and delivery in adolescents.

Methods: The investigation was conducted at Hyderabad's Peltaburz Modern Government Maternity Hospital. Study population: all 15-19-year-old pregnant girls. Cross-sectional prospective study 2019-2020: Studied Used 50 samples. Eligibility: During the study period, all 15-19-year-old pregnant girls were admitted, regardless of parity. Exclude non-obstetric instances. All pregnant women in the research were 20 or older. Before beginning the probe, ethics committee approval was acquired. The study's participants gave signed, informed consent. They had a general checkup, abdominal and vaginal exams. Routine and repeat ultrasonography ruled out congenital defects, placental maturity, amniotic fluid index, biophysical profile, and issues.

Results and discussion: In the study, the prevalence of adolescent pregnancy was determined to be 4.6%. 1260 of the 27376 women who gave birth during this time were in the adolescent age bracket. 50 of these teen pregnancies were examined and evaluated. Adolescent women's pregnancy and childbearing have negative health, demographic, and societal effects. Compared to pregnancy in non-adolescent women, an adolescent mother and her child are more at risk. Adolescent pregnancy is a high risk pregnancy, so organised prenatal care is crucial. In this study, 50% of the patients are from low socioeconomic position, 40% are from middle socioeconomic status, and 10% are from high socioeconomic status. 54% of the cases in this study were illiterate, 16% had only received their primary education, 20% had completed high school, and 10% had attended college.

Conclusion: Adolescent pregnancy and childbirth are associated with negative outcomes across a variety of domains, including health, demographics, and society. When compared to pregnancy in non-adolescent women, the potential dangers to an adolescent mother and her child are significantly higher. Because adolescent pregnancy is a high-risk pregnancy, it is absolutely necessary to have prenatal care that is well organised.

Keywords: Prospective study, maternal, fetal, adolescent pregnancy, tertiary care

Introduction

Adolescence includes period between 10 and 19 years of age, which comprises more than 20% of the world population. Annually, about 16millions adolescent girls give birth, accounting 11.0% of all births worldwide¹. Adolescent pregnancy is defined as pregnancy that occurs among adolescents aged 10-19^{2,3}. The rate of pregnancy among adolescents is increasing, especially in developing countries, with higher adverse health outcomes⁴. More than 11 percent of births globally were because of adolescent mothers⁵⁻⁶. Previous studies have shown that adolescent pregnancy is associated with physical, social problems³, and affects the economic status of girls, their families, and countries^{3,7}. More than one fourth (27%) of women aged 20–24 in developing countries (approximately 12 million) start childbearing at an early age (less than 18 years old)⁸. The recent World Health Organization (WHO) estimate showed that the rate of adolescent pregnancy will grow by the end of 2030, and a major increase in adolescent pregnancy is projected to be in Africa⁹. Problems associated with adolescent pregnancy were considered as the leading causes of death among adolescents aged 16–19⁷. It is one of the leading causes of maternal and child morbidity and mortality^{9,10}, and the main reason for poor health and poverty in low and middle-income countries⁸. Moreover, it is associated with increased risks of adverse pregnancy and childbirth outcomes compared to non-adolescent women¹¹. For example, mothers aged 10 to 14 years were five times at higher risk of death than mothers aged 20 to 24 due to pregnancy and childbirth complications¹², attributing to more than 70,000 adolescent girls death every year¹³.

These early age pregnancies were shown to result in higher rates of pregnancy complications, such as low birth weight (LBW), preterm delivery, small-for-gestationalage (SGA) infants, perinatal death, eclampsia, operative vaginal delivery, and maternal death¹⁴. A recent study

reported the pregnancy outcomes of women of early adolescent age; the authors indicated that early adolescent pregnancies are associated with higher risks of preterm birth and growth restriction, while the other maternal morbidities were shown to be similar to the control groups. Unexpectedly, the cesarean section rate was significantly lower in early adolescent mothers¹⁵. In contrast, recent data obtained from 144 countries indicated that, “excess mortality risk to adolescent mothers might be less than previously believed, and in most countries the adolescent maternal mortality ratio is low when compared with women older than 30 years”¹⁶. The aim of this study was to investigate the maternal and neonatal outcomes in adolescent pregnancy.

Materials and Methods

Study Area: The present study was conducted at Department of Obstetrics and Gynaecology, Modern Government Maternity Hospital, Peltaburz, Hyderabad.

Study Population: All pregnant girls admitted in the age group of 15-19 years.

Study Design: Prospective cross sectional study

Study Period: October 2019 to September 2021

Sample Size: 50

Inclusion Criteria:

- All pregnant girls admitted in the age group of 15-19 years irrespective of parity, socioeconomic status during the study period.

Exclusion Criteria:

- All non-obstetric cases
- All pregnant females equal or more than 20 years during the study period.
- Referred cases

Methodology:

- Institutional ethical committee clearance was obtained prior to the start of study. A written and informed consent was taken from patients who are participating in the present study.
- Data collection was done using a structured proforma.
- They were subjected to general examination, per abdomen examination, per vaginal examination.
- Routine ultrasonography and repeat ultrasonography were done to rule out congenital anomalies, placental maturity, amniotic fluid index, biophysical profile and complications if any.
- Patients were also subjected to other tests such as:
 - Serum Creatinine and Uric Acid
 - Blood Urea
 - LDH
 - Urine Culture and Sensitivity

✚ Screening test for Diabetes

✚ Eundoscopy

- Pregnant woman admitted in labour ward were taken for study
- A structured proforma was used to collect information.
- The cases were followed till they get discharged.
- Information regarding age, educational status, occupation, marital status, age at marriage, health awareness, knowledge about pregnancy and delivery, antenatal visits were obtained from history.
- Complications during antenatal period, delivery and post partum period were noted.
- Details regarding mode of delivery and birth weight of baby were noted.
- Baby details were noted and followed till their discharge.
- Adolescent girl presenting with anemia during pregnancy were managed along the lines of severity of the anemia and their period of gestation.
- Patients presenting with hypertensive disorders of pregnancy were managed according to their individual needs and were provided with bed rest, sedation and antihypertensives.
- Once the patient set into labour, the cases were reviewed with the help of NST and pelvis assessment was done. The course of labour was monitored according to WHO partograph.
- The progress of labour was assessed periodically by abdominal and vaginal examinations in which the following parameters were noted:
- General condition of the patient: hydration, pulse, blood pressure, respiration and temperature.
 - Uterine action
 - Descent of the fetal head
 - Fetal heart rate
 - Cervical effacement and dilatation
 - Station of fetal head
 - Colour of the liquor
 - Evidence of any caput or moulding
- Bishops score was analysed. Instrumental or Caesarean section was performed whenever indicated.
- Episiotomy was performed when indicated.
- Any complications were treated aggressively. Both mother and baby were observed in the postnatal period for any complications.
- Women were educated about contraception and the importance of spacing.
- The observations were computed and compared to evaluate the problems associated with labour in adolescent pregnancies.

Statistical Analysis:

Data entry was done using M.S. Excel and statistically analysed using Statistical package for social sciences (SPSS Version 16) for M.S Windows. Descriptive statistical analysis was carried out to explore the distribution of several categorical and quantitative variables. Categorical variables were summarized with n (%). All results were presented in tabular form and shown graphically using bar diagram or pie diagram as appropriate.

Results & Observations**Table: 1 Registration Status**

Registration Status	No. of Cases(n=50)	Percent
Booked	15	30
Unbooked	35	70
Total	50	100

Table: 2 age wise analysis of adolescent pregnancy

Age in Years	No. of Pregnancies	Percentage
16	1	2
17	2	4
18	11	22
19	36	72
Total	50	100

Out of 50, 70% cases are unbooked and 30% cases are booked 72% of the patients were 19yrs old,22% were 18yrs old, 4% were 17yrs old & 2% were 16yrs old.

Table 3: Socioeconomic status

Socioeconomic Status	No. of Cases(n=50)	Percent
Low	25	50
Middle	20	40

High	5	10
Total	50	100

In this study 50% of patients belong to low socioeconomic status, 40% belong to middle & 10% belong to high socioeconomic status.

Table 4: Educational status

Educational Status	Class	No. of Cases(n=50)	Percent
Illiterate	0	27	54
Primary Education	1-V	8	16
High School	VI-X	10	20
College	XI or more	5	10
Total		50	100

Majority of the cases were illiterate 54%, 16% had primary education, 20% went to High school & 10% attended college.

Table-5: Gestational Age in Weeks

Weeks of Gestation	No. of Cases(n=50)	Percent
28-33	7	14
34-36	5	10
37-39	25	50
40-42	13	26
Total	50	100

In this study, 26% were 40-42 wks of gestation, 50% were in between 37-39wks, 10% were 34-36wks of gestation & 14% were in between 28-33wks.

Table 6: hypertensive disorders in pregnancy

Hypertensive Disorder	No. of Cases(n=16)	Percent
GHTN	6	37.5
Nonsevere Preeclampsia	2	12.5
Severe Preeclampsia	4	25
Imminent Eclampsia	2	12.5
Antepartum Eclampsia	2	12.5
Total	16	100

In the present study 32% of cases had hypertensive disorders of pregnancy, Of these 37.5% of cases had GTN, 12.5% had non severe preeclampsia, 25% had severe preeclampsia, 12.5% had imminent eclampsia and 12.5% had eclampsia.

Table 7: Anemia in Adolescent Pregnancy (n=35)

Anemia	No. of Cases(n=35)	Percent
Mild 10-10.9	11	31.5
Moderate 9.9-7.0	23	65.7
Severe 6.9-4	1	2.8
Total	35	100

In this study 70% of patients are anemic. Of these 31.5% are Mild anemia, 65.7 are moderate anemia & 2.8% are Severe anemia.

Table 8: Mode of Delivery

Mode of delivery	No. of Cases(n=50)	Percent
ASSIST BREECH	3	6
LSCS	15	30
NVD	31	62
VENTOUSE	1	2
Total	50	100

The caesarean section rate is 30% in this study, 62% are NVD ,2% had ventouse, & 6% had assisted breech delivery.

Table 9: Maternal Complications of Adolescent Pregnancy

ANTEPARTUM	No of cases	Percentage
Anemia	35	70
PIH	16	32
CPD	5	10
PROM	3	6
Oligohydramnios	1	2
Prolonged Pregnancy	13	26
Malpresentation	5	10
Preterm Labour	12	24
UTI	2	4

During antepartum period, Anemia was the most common complication in adolescent pregnancy seen in 70% cases, hypertensive disorders in pregnancy seen in 32% cases, Prolonged Pregnancy seen in 26% cases, Preterm labour seen in 24% cases , malpresentation (breech) seen in 10% cases , CPD seen in 10% cases , PROM seen in 6% cases , UTI seen in 4% cases , Oligohydramnios seen in 2% cases.

Table 10: Intrapartum Outcome Of Adolescent Pregnancy

INTRAPARTUM OUTCOME	No. of Cases(n=50)	Percentage
GOOD	45	90.0
PPH	5	10.0
Total	50	100.0

Table 11: Postpartum outcome of adolescent pregnancy

Post partum Outcome	No. of Cases(n=50)	Percentage
Eclampsia	1	2
Good	47	94

UTI	2	4
Total	50	100

During postpartum period 2% pts had eclampsia, 4% pts had UTI & 94%pts had no complications.

Table 12: Indications of Caesarean Section

INDICATIONS	No. Of cases(n=15)	Percentage
BREECH	2	13.3
CPD	5	33.3
FD	4	26.7
OLIGO	1	6.7
PRE LSCS	3	20
Total	15	100

LSCS was mode of delivery in 30%cases Indications for LSCS - Cephalopelvic Disproportion (33.3%),fetaldistress(26.7%),PreviousLCSC(20%),Breech(13.3%)& oligohydramnios(6.7%).

Table 13: fetal outcomes

Fetal Outcome	No. of babies(n=50)	Percent
IUGR	1	2
BIG BABY	1	2
JAUNDICE	5	10
GOOD	18	36
IUD	3	6
LBW	16	32
RD	6	12
STILL BORN	0	0
Total	50	100

In present study, 32% of babies were LBW, 12% of babies had respiratory distress 2% were IUGR, 10% of babies had jaundice, 6% were IUD, 2% has Big baby, & 36% were normal.

Table 14: NICU admission

NICU	No. of Cases(n=47)	Percent
Not admitted	29	58
Admitted	18	36
Total	47	100

In present study out of 47live babies, 36% of babies were admitted to NICU & 58% of babies were healthy not requiring admission.

Table 15: APGAR score (n=50)

APGAR Score	1 min		5 Min	
	No. cases	Of Percentage	No. cases	Of Percentage
>7	40	80	47	94
4-6	7	14	0	0
<3	3	6	3	6
Total	50	100	50	100

It was observed that majority of the babies (94%) had an APGAR score of >7 at 5minutes. 6% of the babies had APGAR score <3(IUD) at 5minutes.

Table 16: neonatal weight (n=50)

Weight in kg	No. of babies(n=50)	Percentage
<1.5 kg	5	10
1.5-2.5 kg	21	42
2.6-3.5 kg	23	46
>3.5 kg	1	2
Total	50	100

Of the 50 births including IUD's, 10% of them weighed less than 1.5kg, 42% of them were b/w 1.5 to 2.5kg, 46% of them were b/w 2.5 to 3.5kg and 2% were >3.5kg.

DISCUSSION

Pregnancy and childbearing in the adolescent women has adverse health, demographic and social implications. An adolescent mother and her infant are at greater risk compared to pregnancy in non-adolescent women. Organized prenatal care is essential as adolescent pregnancy is a high risk pregnancy.

Table 17: Incidence of Adolescent Pregnancy:

Gazala et al(2014) ²⁰	5.10%
Kale KM et al ⁴⁷ (1997)	6.4%
Shobhana Patted et al ⁴⁸ (1998)	5.33%
Rashmi L et al(2016) ⁴⁹	5.57%
Rita D et al ⁵⁰ (2017)	10.26%
Present Study	4.6%

The incidence of adolescent pregnancy in the study was found to be 4.6%. A total of 27376 women delivered in this time period out of which 1260 women were in adolescent age group. Out of these 50 adolescent pregnancies were studied and analyzed.

Age

In this study, 72% of the patients were 19yrs old, 22% were 18yrs old, 4% were 17yrs old & 2% were 16yrs old. In Sharma AK et al.,³⁷ Mean age was 17 years. In Kamini S et al.,¹⁹ 98% of the cases belonged to higher adolescent group (17-19 years) and the rest 2 mothers were in 15-17 years of age. No cases were found in the lower adolescent group (13-15 years). The mean age of adolescent mothers was 19 years.

Although the legal age at marriage is 18 years for females and 21 years for males in India, early marriage is common. Most reproduction in India occurs within marriage; so, the low age at marriage automatically links to early onset of sexual activity and thereby fertility.²¹

Booking Status

In this study, out of 50, majority of the cases were Unbooked cases accounting 70%.

Socioeconomic status

In this study, 50% of patients belong to low socioeconomic status, 40% belong to middle & 10% belong to high socioeconomic status. Majority of patients were of low socioeconomic status.

This is mostly due to poor educational status in the adolescent mothers. Smitha et al.²² had reported most adolescent pregnancies occur in the lower socioeconomic group, especially the unmarried with increasing sexual freedom, adolescent pregnancies are increasing in the higher socioeconomic group also, but the rate of abortion in this group is high. Adolescent pregnancy has also been associated with an increased prevalence of domestic violence. However, a recent review of 15 studies has failed to clarify whether there is a causal link between maltreatment or violence and adolescent pregnancy or whether there is an increased risk of domestic violence to pregnant adolescents.²³

Education

In this study, majority of the cases were illiterate 54%, 16% had primary education, 20% went to High school & 10% attended college. In Kamini S et al.,¹⁹ 61% of study population were literates. Wellings et al.¹⁷ surveyed over 11000 males and females aged 16-44 years across the UK. They found that 29% of sexually active young women who left school at 16 years of age without any qualifications had a child before the age of 18 years, compared with 14% of those who left at 16 with qualifications and 1% of those who left at age 17 years or over. Education and Urbanization – the effect of education in the development of modern adolescence has made the adolescent less dependent upon parents and family, and has postponed the age at marriage, and thereby the age of socially sanctioned sexual relations. In the context of social background and determination of adolescent pregnancies, another aspect of improved education is that the overall level of childbearing is usually lower in better- educated women (compared to the less educated) and in urban (compared with rural) areas. Greater modernization – living in an urban area or having a higher level of education is therefore expected to be associated with lower levels of adolescent childbearing, all factors being equal. For individuals and families, modernization means that an early start to childbearing (and a large family) is less desirable because of:

- An increased need to educate girls
- Young women's greater motivation to attain at least secondary schooling and to work for wages.
- Greater availability of work opportunities
- Higher costs of rearing children and providing them with a high level of education

In this respect the education of girls is the most important factor, because it empowers them to decide on their own lives, it enables them to develop planning behavior. Thus better education has two opposing effects: it postpones marriage, makes the adolescent less dependent on parental influences and therefore leads to premarital sexual relations and pregnancies. On other hand, in the long run it may stimulate planning behavior, contraception and prevention of unwanted pregnancies.

Gestational Age

In this study, majority of patient's gestational age was between 37-39 wks (i.e, 50%), 26% were in between 40-42wks, 14% were 28-33wks of gestation & 10% were in between 34-36wks.

Hypertensive Disorders and Anemia

In this study, 32% of cases had hypertensive disorders of pregnancy, Of these 37.5% of cases had GTN, 12.5% had non severe preeclampsia, 25% had severe preeclampsia, 12.5% had imminent eclampsia, 12.5% had eclampsia Davidson et al.²⁴ reported that approximately 14% of births of adolescents 17 years old or younger are premature versus 6% for women 25 and 29 years old. Hyperemesis, Anemia, Hypertensive Disorders of Pregnancy and eclampsia are more common in adolescent pregnancies.

Russel et al.²⁵ reported the incidence of pre eclampsia in two groups of adolescents in New Castle hospital namely, 16 years and under 16 was 13.2% and in 17-19 years 8.6%. In USA, three of nine studies showed an increased risk for adolescents and one found a diminished risk of PIH. In the United Kingdom Konje et al.²⁶ study found an increased risk for hypertension in adolescents but no difference for preeclampsia. Of 11 studies in developing countries, eight found no difference, two found an increased risk for adolescents and one (Adedoyin et al.)²⁷ found less hypertension and more pre-eclampsia in adolescent.

In India Aznar et al.²⁸ had observed an incidence of 10% eclampsia in their adolescent group and the frequency was more in girls less than 15 years (ACOG,1998; National Health Statistics,

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1997).

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Table 18: Comparison of pre-eclampsia with respect to other studies

	Pre-eclampsia in adolescent pregnancy
Present Study	32%
Verma V Study ³⁸	18.8%
Shravage JC Study ³⁹	37%
Russel Study ²⁵	20.2%
Pawar S Study ⁴⁰	20%
Bhaduria Study ⁴¹	23.7%
Pal Amitha et al. ⁴²	15%

Adolescent pregnancy is a known risk factor for developing pre-eclampsia. The findings are comparable with that of Verma V, Shravage JC and Bhaduria studies, which also showed higher rates of pre-eclampsia in adolescent mothers.

Hemoglobin

In this study, 70% of patients are anemic of which 31.5% are Mild anemia, 65.7% are moderate anemia, 2.8% Severe anemia. In the study 3 patients with anemia had Idiopathic Thrombocytopenic purpura {ITP} Boulton et al.³⁸ reported a high incidence of anemia and low birth weight infants in adolescents.

Anandhalakshmy²⁹ reported a high incidence of severe Anemia, Hypertensive Disorders of Pregnancy and Puerperal sepsis among adolescents.

Porozhanova et al.³⁰ in Russia found Anemia in 13.04%, overweight in 6.4% and preeclampsia and eclampsia in 3.22% among adolescent pregnancies.

The increase in plasma volume and the subsequent decrease in hemoglobin concentration and haematocrit in normal pregnancy complicate the assessment of anemia. WHO defines the minimum hemoglobin concentration in normal pregnant women as 11.0 g/dl (WHO, 1972); the minimum haematocrit level is 0.31 g/dl (Letzky et al.).³¹ In fact there are good reasons to set the minimum haemoglobin value somewhat lower than 11.0 gm/dl because hemodilution in normal pregnancies may decrease this level to 10.4g/dl (Van den Brock, 1998). Severe anemia is hemoglobin <7 g/dl. In developed countries Scholl et al.³² reported no statistically significant differences in the prevalence of anemia in adolescents compared to adults in USA. An increased prevalence of anemia in young pregnant women was found in four of seven studies from developing countries included in review by Scholl et al.³² and in two the difference was statistically significant.

Table 19: Comparison of anemia with respect to other studies

Anemia in Adolescent Pregnancy	
Present Study	70%
In Kamini S et al., ¹⁹	16%
Verma Study ³⁸	35%
Nayak et al. ⁴³	12.98%
Chhabra et al. ⁴⁴	70%
Shravage JC Study ³⁹	84.2%
Pal Amitha et al. ⁴²	27.5%
Ashok Kumar, 2007<11g ⁴⁵	62.9%
Chhabra S ⁴⁴	79%
Bhalerao AR, Desai ⁵¹	25.5%

Kale KM et al ⁴⁷	31.7%
Tripathy S et al., ⁵²	8.33%
Gazala et al(2014) ²⁰	8.12%
Rashmi L et al ⁴⁹	22.11%
Rita D et al ⁵⁰	79.2%

Study by Verma V and Shrivage JC also showed high rates of adolescent mothers with anemia as depicted in our study probably because of poor nutrition in this group of women. To counter this problem more focused national programmes like FOGSI 12 by 12 where aim is to achieve to achieve 12 gms of Hb% by the age of 12 is necessary.

Mode of Delivery

In this study, The caesarean section rate is 30% in this study, 62% are NVD, 2% had ventouse, & 6% had assisted breech delivery. In Kamini S et al.,¹⁹ Proportion of mothers who delivered by normal vaginal delivery was 66% and caesarean sections in 25% of cases. Forceps deliveries were 9%. In Russel series²⁵ the caesarean rate was 4% in less than 16 years old and 7% in 17-19 years old.) Bhattacharya et al.³³ reported a caesarean rate of 22.1%. From the National database Netherlands, 1989 adolescents usually had spontaneous vaginal deliveries. Mukasa et al.³⁴ found a caesarean rate of 12% (in adolescent primigravidas) and 15% in control group (21-25 years), indicating that rate of CPD (the commonest indication for caesarean section) is same among all primigravidas, whatever the age. Forceps was used in indicated cases. In Philips series³⁵ the forceps rate was 8.53%. In Russel series²⁹ forceps incidence is 18% in under 16 years of age and 12% in 17-19 years.

Table 20: Comparison of lower segment cesarean section (LSCS) incidence with respect to other studies

LSCS	Adolescent
Present Study	30%
Verma Study ³⁸	3%
Bhattacharya et al. ³³	25%
Nayak et al. ⁴³	7.56%
Chhabra Study ⁴⁴	21%

Shravage JC Study ³⁹	29.3%
Shobhana et al ⁴⁸	31.0%
Mukasa et al ³⁴	12%
Kale et al ⁴⁷	13.6%

Antepartum Complications in Adolescent Pregnancy

In this study during antepartum period, Anemia was the most common complication in adolescent pregnancy seen in 70% cases, hypertensive disorders in pregnancy seen in 32% cases, Prolonged Pregnancy seen in 26% cases, Preterm labour seen in 24% cases, malpresentation (breech) seen in 10% cases, CPD seen in 10% cases, PROM seen in 6% cases, UTI seen in 4% cases, Oligohydramnios seen in 2% cases, 6% cases had ITP along with anemia, one case was infected with HIV.

Intrapartum Outcome

In this study, 90% cases had good intrapartum outcome, 10% cases had PPH.

Postpartum Outcome

In this study, 94% cases had good postpartum outcome, UTI was seen in 4% of cases & eclampsia was observed in 2% of cases.

Indications of Caesarean Section

In this study, most common indication for LSCS was Cephalopelvic Disproportion (33.3%) followed by fetal distress (26.7%), Prev LSCS (20%), Breech (13.3%), oligohydramnios (6.7%).

Fetal Outcomes

In this study 32% of babies were LBW, 12% of babies had respiratory distress 2% were IUGR, 10% of babies had jaundice, 6% were IUD, 2% has Big baby, & 36% were normal. In Kamini S et al.,¹⁹ 25% of babies were LBW. In Nibha et al.,¹⁸ most common adverse fetal outcome noted was Low Birth Weight babies (26 babies).

NICU Admission

In this study, Out of 47 live babies, 18 babies (36%) were Admitted to NICU & 29 babies (58%) were healthy with no need for NICU admission.

APGAR Score

In this study, majority of the babies (94%) had an APGAR score of >7 at 5 minutes. 6% of the babies had APGAR score <3 (IUD) at 5 minutes. In Kamini S et al.,¹⁹ APGAR score was ≤3 in 7% babies at 5 minutes.

Neonatal Outcome

The burden of young mother hood falls most heavily on the offspring of these mothers because of their mental and physiological, immaturity to look after the newborn. Increased low birth

weight babies, infant morbidity and infant death are the greatest medical risk associated with adolescent pregnancy. In this study, of the 50 births including 3 IUD'S, 10% of them weighed less than 1.5kg, 42% of them were between 1.5 to 2.5kg, 46% of them were between 2.5 to 3.5kg and 2% were >3.5kg. In developed countries the incidence of LBW or VLBW in infants of adolescent mothers was higher compared to infants of older mothers (Miller et al., 1996).³⁶ The incidence of LBW was significantly higher in the younger adolescent. in the logistic regression analysis, the risk of delivering a LBW or VLBW infant progressively increased as maternal age decreased.

Table 21: Incidence of low birth weight

Present Study	52%
Verma Study ³⁸	35%
Shravage JC Study ³⁹	71.42%
Kushwaha et al. ⁴⁶	67.3%
Ashok Kumar, ⁴⁵	50.4%

Shravage JC and Kushwaha studies also showed high incidence of low birth weight in adolescent primigravidas. Babies born to Adolescents are more likely than those born to women in their 20s to be born early and to weigh less than 2500g at birth. Some of the explanations proposed for these adverse outcomes are biological. Biological immaturity in adolescent mothers itself is an inherent risk factor for poor outcome and even adequate prenatal care does not completely eliminate the risk.

Two general features of biologic immaturity could have a role in increasing the risk of adverse outcomes: a young gynecologic age (defined as conception within two years after menarche) and the effect of the girl becoming pregnant before her own growth has ceased, thus competing with the developing fetus for nutrients adding to its detriment. The main cause of premature and LBW babies may be poor nutritional status, Pre- eclampsia and Anemia may be additional reason for premature and low birth weight babies.

Maternal mortality

In this study, there was no maternal mortality. Whether the adolescents are inherently a high-risk group due to biological, psychological factors or whether social demographic factors including prenatal care are the most important determinants of the poor outcome of adolescent pregnancies is not clearly known. Good prenatal care can substantially reduce mortality and complications from pregnancy and childbirth.

Adolescent pregnancy is a social problem with medical consequences and the medical programs that presently exist are incapable of bringing about the ultimate solution and prevention. Much of the effort to combat this problem is expended on obstetric, neonatal and contraceptive program. The minimum age of marriage for girls was amended by the Government of India as 18 years in 1978. even then the problem of adolescent pregnancy is very much existing, as child marriages are still prevalent in Indian rural communities. The obvious need of the day is to implement the legal age of marriage and fertility regulation services in the community by providing awareness among the rural population.

Adequate prenatal care and community education are valuable to adolescent mothers with biological and psychosexual immaturity burdened with poor socioeconomic status, illiteracy and malnutrition. The adolescent pregnant mother deserves a higher priority for comprehensive services that exist. They must have an institutional delivery under specialist supervision. Every adolescent mother should be given contraceptive advice after delivery and adequate follow up provided to prevent further unplanned pregnancies. Of course society plays a dominant role in the emotional status of pregnant adolescents. The decision to carry out pregnancy till term is influenced by her social circumstances. A married adolescent girl with a fairly stable financial background will view her pregnancy with a little more maturity and is ready to undergo necessary care for pregnancy and confinement.

It is not easy for the government and local public services to influence young people's decision about their sexual behaviour. Such activities should revolve around:

- a. Improving knowledge about contraception unintended pregnancy & reproductive health.
- b. Increasing access to contraception.
- c. Intervening in adolescent sexual behavior , intervention to prevent unwanted pregnancy by emergency contraception may be most the useful method of preventing unwanted pregnancy.
- d. Sex education and abstinence is seen as one of the most important process in reducing adolescent pregnancy.

In many parts of the developing world especially in rural areas, girls are married off shortly after puberty and sometimes even before. There is often considerable pressure on the young married women to bear children immediately.

Recommendations

- Though the age of marriage is legalized in India which is 18 years, still the adolescent marriage is common (7% of the girls aged between 15 to 18 years were found to be pregnant and nearly 23% of the girls in 20-24 age group were married below the age of 18 years). Hence strict Vigilance is required for legalization and implementation of Marriage age.
- The Prohibition of Child Marriage (Amendment) Bill , 2021 , which seeks to raise the legal age of marriage for women from 18 to 21 , which will apply to all communities in the country and once enacted will supersede existing marriage and personal laws.

- Increasing the age of marriage for women to 21 impervates in lowering maternal morlality rate and infant mortality rate , as well as improvement of nutrition levels and sex ratio at birth , as these would promote possibilities of responsible parenthood for both father and mother. This bill will help in bringing down incidence of adolescent pregnancy and also the complications of adolescent pregnancy.
- The obstetrician is the appropriate person to counsel adolescent girls.
- The government and NGOs can bring about a change by creating awareness through mass media like paper, T.V. Radio, Internet, Safe sex education and STD's.
- Making provision for emergency contraception, MTP services and counseling about the risks involved can reduce the major problem of unwanted pregnancies.

Prenatal:

1. Encouragement for early referral for prenatal care.
2. Strict advice about diet, adverse habits like smoking , alcohol consumption.
3. To mobilise social support.
4. Extra advice and education about about antenatal care and child bearing.

Labour & Delivery:

1. To ensure adequate psychological support.
2. Encouraging institutional delivery
3. Delivery in a special unit if dystocia is an anticipated problem

Postnatal:

1. Advice and support for infant feeding care.
2. General social & financial support.
3. Discussion about contraception.

Conclusion

Adolescent pregnancy today still represents one of the most important public health problems. There is no doubt that the obstetric problems can be managed by medicine and so the risk of adolescent pregnancy can be lowered. Adolescent pregnancy was more common in low socio-economic status, due to lack of education, awareness of complications of adolescent pregnancy.

Education of the female child play a significant role in delaying marriage and hence delaying childbearing, sex education, thus protecting the young girl from being exposed to various complications of adolescent pregnancy. There is a need to promote the use of Contraceptives amongst the married adolescents and ensuring the availability of contraceptives at a wider scale. Access to contraceptives is the cornerstone in preventing adolescent pregnancies while access to MTP services is crucial for managing them. The health care provider should consider adolescent pregnancy as a 'High Risk' pregnancy and should educate the pregnant teenagers to have more number of antenatal visits so that any signs or symptoms of various complications of the adolescent pregnancy could be recognized at the earliest.

Attention should be given to the use of various screening and diagnostic tests and to the interventions needed if any complication does occur during the course of pregnancy, labour or

postpartum period. Proper monitoring of the progress of labour is important to prevent prolonged labour. Pregnancy itself has a tremendous effect on adolescent girl and her family. So this indicates, that awareness regarding adolescent pregnancy, sex education and access to effective contraception are essential for the physical, mental and social status of adolescent girl.

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