Original Article

Teenage Pregnancy - Its Impact on Maternal and Fetal Outcome

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Abstract

Background: Teenage pregnancy rates varies vastly between different countries and different regions within a country. Such pregnancies are seen mostly amongst the poorer and less educated sections of the society. In developed countries majority of teenage pregnancies occur to unmarried girls unlike developing countries including India where teenage pregnancies occur to married girls and are associated with early marriages.

Aim & Objectives: This study aimed to find the incidence and to evaluate the maternal and fetal outcome of teenage pregnancies.

Material & Methods: A Hospital based clinical prospective study of all teenage pregnant females admitted to a tertiary care centre. Required details were collected on a proforma by taking history and following up the patients from admission to delivery. MS Excel was used for statistical purpose.

Results: Teenage pregnancy comprised 5.10% of the total Obstetric admissions. In this study 53.12% teenage pregnancies were associated with complications. The major maternal complications were Preterm labour 27.45%, Hypertensive Disorders of Pregnancy 20.17%, Premature Rupture of Membranes 18.21%, Abortion 14.57%, Anemia (8.12%). Low Birth Weight 16.86%, preterm births 16% and stillbirths 5% were major adverse fetal outcomes.

Conclusion: Teenage pregnancy is still a common occurrence. It has adverse impact on the health of teenage mothers leading to various adverse maternal and fetal outcome.

Keywords: Teenage pregnancy, Clinical prospective study, Maternal and fetal outcome

INTRODUCTION

World Health Organization[1] defines Teenage Pregnancy as "any pregnancy from a girl who is 10-19 years of age", the age being defined as her age at the time the baby is born.[2] Often the terms "Teenage pregnancy" and "Adolescent pregnancy" are used as synonyms.

According to UNICEF, worldwide every 5th child is born to teenage mother.[3] Worldwide 13 million births each year occur to girls younger than 19 years. The incidence of teenage pregnancies varies dramatically between the different countries. Approximately 90% of the teenage births occur in developing countries.[4] Nevertheless, there is also a significant variation in teenage pregnancy and birth rates between developed countries, although the teenage pregnancy and birth rate of developed countries are significantly lower than that of developing countries.[3]

Teenage pregnancy is an important public health problem in both developed and developing country, as it is a 'high-risk' or 'at-risk' pregnancy due to its association with various adverse maternal and fetal outcomes which results in increased mortality and morbidity of the mother and the child.

Early childbearing is associated with various health risks for both mother and child. Teenage mothers are more likely to experience pregnancy related complications which often lead to maternal death.

Teenage pregnancies are considered problematic because complications from pregnancy and childbirth are the leading causes of death in teenage girls aging between 15 and 19 years in developing countries. It is estimated that 70,000 female teenagers die each year because they are pregnant before they are physically mature enough for

successful motherhood.[5] Therefore, teenage pregnancies and births are considered as risky.

Adverse Maternal outcomes of teenage pregnancy includes Preterm labour, anemia, Hypertensive Disorders of Pregnancy (HDP), Urinary Tract Infection, abortion, Sexually Transmitted Diseases, HIV, malaria, obstetric fistulas, puerperial sepsis, mental illness and high rate of Cesaerean Sections for cephalopelvic disproportion and fetal distress. Adverse fetal outcomes include preterm births, Low Birth Weight infants, Still Births, birth asphyxia, Respiratory Distress Syndrome and birth trauma or injury.

Hence, the present study aims to find out the incidence and to evaluate the various complications associated with teenage pregnancy.

MATERIALS AND METHODS

This is a one year clinical prospective study carried out in the Department of Obstetrics and Gynecology, at a tertiary care centre of Madhya Pradesh, India. Institute ethical committee approval was taken. All pregnant females admitted to the Hospital in the age group of 13-19 years during the study period were included and all pregnant females equal to or more than 20 years admitted to the Hospital during the same period were excluded from the study. The required details were collected by history taking and following up the patients from admission to delivery. MS Excel was used for statistical purpose.

RESULT AND OBSERVATION

In the present study there were 672 teenage mothers admitted during the study period amongst the total obstetric admissions of 13189, giving an incidence of 5.10% of teenage pregnancy (Figure 1).

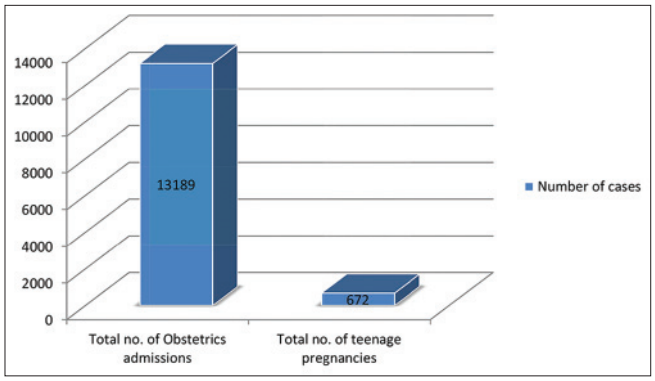

Figure 1: Number of Teenage Pregnancies during study period

Out of the 672 teenage pregnancies, 357 were associated with complications (53.12%) and the remaining 315 were without any complication (46.88%). Out of 357 teenage pregnancies which were associated with complications, 241 were associated with single complication (67.5%), whereas 116 were associated with multiple complications (32.5%), indicating that teenage pregnancies are high risk pregnancies (Table 1).

Table 1: Distribution according to presence of complication

Complication	Number of mothers	Percentage
Without complication	315	46.88%
With complications	357	53.12%
Total	672	100%

Amongst the 61 teenagers admitted during the first trimester, abortion (52) was the most common complication seen accounting for 85.24% of first trimester complication, out of which 48 were spontaneous and 4 were induced abortions (Table 2).

Table 2: First trimester complications in teenage mothers

First trimester complication	Number	Percentage
Abortion	52	85.24%
Ectopic pregnancy	4	6.56%
Hyperemesis gravidarum	3	4.92%
Vesicular mole	2	3.28%
Total	61	100%

The most common complication associated with teenage pregnancy during third trimester was Preterm Labour (98). Amongst 72 mothers who had Hypertensive Disorders, 34 had Gestational Hypertension, 22 had Preclampsia and 16 had eclampsia. 29 pregnant teenagers were found to be anemic, of which 2 had mild, 12 had moderate and 15 had severe anemia (Table 3).

Table 3: Other complications in teenage pregnancy

Complication	Number	Percentage
Preterm labour	98	27.45%
Hypertensive disorders	72	20.17%
PROM	65	18.21%
Malpresentation	35	9.80%
Foetal distress	33	9.24%
IUGR	30	8.40%
Anemia	29	8.12%
IUFD	27	7.56%
Antepartum hemorrhage	12	3.36%
Medical disorders	10	2.80%
Oligohydromnios	08	2.24%
Multiple pregnancy	02	0.56%

Out of the 611 teenge mothers who delivered, majority (540) had normal vaginal delivery (Table 4).

Table 4: Table showing mode of delivery

Mode of delivery	Number	Percentage
Vaginal delivery	540	88.38%
Cesarean delivery	71	11.62%
Total delivered mothers	611	100%

Out of the 71 teenage mothers delivered by Cesarean Section, six mothers had more than one indication for Cesarean Section. Majority of Cesarean Section were due to Fetal Distress. It was followed by Malpresentation (14) of which 12 was for Breech presentation and one each for face and brow presentation. The other indications for C- Section in teenage mothers were Contracted Pelvis, Previous C-Section, CPD and Obstructed Labour (Table 5).

Table 5: Indication for Cesarean Section

Indication	Number	Percentage
Fetal distress	36	50.70%
Malpresentation	14	19.72%
Contracted pelvis	08	11.27%
Previous caesarean	07	9.86%
CPD	05	7.04%
Obsructed labour	04	5.63%
Persistent occipito posterior	01	1.40%
Cervical dystocia	01	1.40%
DTA	01	1.40%

In the present study there were two maternal deaths out of 672 teenager mothers. Both were due to indirect causes of maternal mortality. One was a case of Rheumatic Heart Disease who died due to Atrial fibrillation and another was a case of Hepatitis who died due to hepatic encephalopathy (Table 6).

Table 6: Maternal deaths in teenage pregnancy

Total no. of teenage mothers	Maternal death
672	02

Majority of the babies (465) born out of such pregnancies were healthy babies. The most common adverse fetal outcome noted in the study was Low Birth Weight babies (103 babies). Amongst 30 babies who needed NICU admissions, 18 were Low Birth Weight babies. There were 30 Still born babies, out of which 26 were SB Fresh and 4 were SB Macerated (Table 7).

Table 7: Fetal outcome of teenage pregnancy

Foetal outcome	Number	Percentage
Alive and healthy	465	76.10%
Low birth weight	103	16.86%
Nicu admissions	30	4.91%
Still birth	30	4.91%

DISCUSSION (TABLE 8)

In the present study, 5.10% of the study population were teenage pregnancies. Comparison with incidences of other Indian studies[6-9] and incidences of other Developing and Developed countries [10] are shown in Table 8.

Table 8: Table showing comparison with other studies

Sr. No	Heading	Present study (in %)	Other studies (in %)
1.	Incidence	5.10	3-10 (Indian studies-Ambedkar *et al.*[6], Dubashi SS[7], Bhalerao *et al.*[8], Mahavarkar *et al.*[9]) 21-35 (developing countries[10]-Nepal, Nigeria, Bangladesh) <5 (developed countries[10]-UK, USA, Japan, Switzerland)
2.	Maternal complications		
	Preterm labor	27.45	10.56 (Dubashi SS[7]) 16.0 (Bhalerao *et al.*[8]) 48.0 (Mahajan S[12])
	HDP	20.17	10.6 (Sarkar *et al.*[14]) 13.05 (Padte *et al.*[15]) 14.2 (Sharma *et al.*[13])
	Anemia	8.12	>25 (Rahman *et al.*[17], Bhalerao *et al.*[8], Saxena *et al.*[16])
	Abortion	14.57	8-10 (developing countries-Sharma *et al.*[11], Bhalerao *et al.*[8], Dubashi SS[7])
3.	Delivery outcome		30-60 (developed countries- USA)
	Caesarean section	11.62	6.0 (Bhalerao *et al.*[8]) 26.0 (Dubashi SS7)
4.	Fetal outcome		34 (Mukhopadhyay P[18])
	IUGR	8.4	5.5 (Saxena *et al.*[16])
	LBW	16.86	33-39 (Saxena *et al.*[16], Mukhopadhyay P[18], Ambedkar *et al.*[6])
	Stillbirth	4.91	4-5 (Bhalerao *et al.*[8], Saxena *et al.*[16], Mukhopadhyay P *et al.*[18])

Among the patients admitted to the Hospital during the third trimester for delivery, the most common complications observed were Preterm Labour (27.45%) followed by Hypertensive Disorder (20.17%), Premature Rupture of Membranes (18.21%), malpresentation (9.8%),

Foetal Distress (9.24%), IUGR (8.4%), Anemia (8.12%) and IUFD (7.56%) successively.

Various studies conducted in different regions of the world revealed preterm labour to be the most common complication as reported to be 10.56% by Dubashi SS,[7] 13.2% by Sharma et al[11] and 48% by Mahajan S.[12] The present study revealed it to be 27.45%.

The second most common complication was observed to be Hypetensive Disorders as reported 14.2% by Sharma et al[13], 10.6% by Sarkar et al[14] and more than 13.05% by Padte et al.[15] In contrast the present study showed a higher incidence (20.17%).

As pregnant teenagers often receive inadequate antenatal care, their anemia during labour and the postpartum period usually get worse. In developing countries more than 25% of teenage mothers were found to be anemic as revealed in studies conducted by Saxena et al,[16] Bhalerao et al [8] and Rahman MM et al.[17] In contrast to it our study found a lower incidence (8.12%).

In most developed countries (including the USA) 30–60% of adolescent pregnancies end in abortion.[2] While in developing countries including India abortion rate was found to be between 8-10% among teenage mothers. The present study agrees with other studies.

Saxena et al[16] reported an incidence of IUGR to be 5.5% in teenage mothers which is lower than the present study (8.4%).

Cesarean Section

Incidence of C-Section in the present study was 11.62%. Majority of Cesarean Sections were due to Fetal Distress. It was followed by Malpresentation (19.72%), Contracted Pelvis, Previous C-Section, CPD and Obstructed Labour.

The incidence of CS among teenage mothers were reported 6% by Bhalerao et al,[8] 34% by Mukhopadhyay P[18] and 26% by Dubashi SS.[7] These studies too report Fetal distress, CPD and Contracted Pelvis to be leading causes for Cesarean Section amongst Teenage mothers.

Maternal Mortality

The two maternal deaths in our study were due to indirect causes of maternal mortality**.** One was a case of Rheumatic Heart Disease who died due to Atrial fibrillation. The second was a case of Hepatitis-B who died due to hepatic encephalopathy.

In India and other developing countries maternal mortality among teenage mothers were higher because of unsafe abortion.

In developed countries maternal mortality rates are so low that age-specific rates are not easily available.

In Nigeria, Harrison et al[19] reported increased rates of maternal mortality in young pregnant girls <15 years of age (maternal mortality 27/1000 compared to 4/1000 in women 20–24 years).

In Ethiopia, Kwast et al[20] reported a maternal mortality rate of 12.7/1000 in mothers 15–19 years of age, 50% of them due to unsafe abortion, compared to 3.6/1000 in mothers aged 25-29 years.

Fetal Outcome

In the present study 103 (16.86%) were Low Birth Weight Babies, 30 (4.91%) needed NICU admission and 30 (4.91%) were stillbirths.

Other Indian studies found the incidence of LBW babies between 33 and 39%[6] and the incidence of Stillbirth around 4-5%.[8,16]

In the Pacific Islands, study undertaken by Swati Mahajan[12] reported an incidence of LBW to be 19%.

Though the adverse fetal outcome in developed countries are very low, yet it is higher in babies born to teenage mothers as compared to babies born to mothers in their twenties.

CONCLUSION

The present study aimed to evaluate the outcomes and complications of teenage pregnancy. It was also concluded from the present study that Preterm labour, Hypertensive Disorders of Pregnancy, Premature Rupture of Membrane, abortion, anemia, malpresentations, IUGR, IUFD were major maternal complications; Low Birth Weight and Still Births were major adverse fetal outcomes.

Teenage pregnancy today, still represent one of the most important public health problems. There is no doubt that the obstetrical problems can be managed by modern medicine and so the risk of Teenage pregnancy can be diminished.

The health care provider should consider Teenage pregnancy as a 'high risk' pregnancy and should educate the pregnant teenagers to have more number of antenatal visits so that the signs and symptoms of various complications of teenage 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

or labour. Proper monitoring of the progress of labour is important to prevent prolonged labour.

Education of the female child can play a significant role in delaying marriage and hence delaying childbearing, thus protecting the young girl from being exposed to the various complications of teenage pregnancy.

There is a need to promote the use of Contraceptives amongst the married teenagers and ensuring the availability of contraceptives at a wider scale. Access to contraceptives is the cornerstone in preventing teenage pregnancies while access to abortion services is crucial for managing them.

Good antenatal and intranatal services, good neonatal services, contraceptive services and abortion services, all together can minimize the various risks associated with teenage pregnancies to a large extent. With all these measures, we can hope for a world-wide decline in the trend of teenage pregnancy rates and complications in the years to come.

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