Section: Obstetrics & Gynaecology

Original Research Article

A RETROSPECTIVE STUDY OF MATERNAL AND FETAL OUTCOMES IN ADOLESCENT PREGNANCY IN TERTIARY CARE HOSPITAL

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Abstract

Background: Adolescent pregnancy poses significant health and societal challenges, with increased risks to both mothers and children. Effective management and antenatal care can mitigate the long-term adverse outcomes in adolescent mothers and their offspring. This study aimed to determine the incidence of teenage pregnancy and study maternal and fetal outcomes in teenage pregnancy. **Materials and Methods:** This observational, retrospective study of 2925 pregnant patients, aged 12-19, who delivered at the Government Medical College Hospital, Namakkal, a tertiary care unit, between April 2022 and March 2023. Data on maternal age, socioeconomic status, pregnancy and neonatal outcomes, healthcare provision, and complications, including obstetric and postpartum issues, were collected from hospital records. The variables included gestational age, delivery mode, baby's weight, and NICU admissions. **Result:** Among the 2925 pregnant patients, 222 were adolescent pregnancies. The primary mode of delivery was normal vaginal delivery 110 (49.55%), followed by caesarean 104 (46.85%). Common maternal complications included anaemia 47 (54.02%) and pregnancy-induced hypertension 32 (36.78%). The neonatal issues were primarily low birth weight 62 (60.79%) and preterm birth 38 (37.25%). Obstetric complications included CPD 28 (66.67%) and PPH 13 (30.95%). Of the patients, 188 (74.31%) underwent PPIUCD insertion, 6 (2.37%) preferred Centchroman tablets and 12 (4.74%) preferred medroxyprogesterone acetate injections. 47 (18.58%) were discharged without coverage. **Conclusion:** The high prevalence of adolescent pregnancy in India and its adverse maternal and neonatal outcomes underscore the need for targeted evidence-based interventions. Improved education, healthcare access, and socioeconomic support are essential for reducing these impacts.

INTRODUCTION

Pregnancy in adolescents remains a pressing public health issue in many countries, including India. Adolescent pregnancy is a menacing issue with multiple consequences for maternal health, child health, and society's overall well-being. Efforts to prevent adolescent pregnancy have increased, but many adolescents continue to conceive. The WHO Health Organization defines the period between 10-19 years of age as the adolescent period, also called teenage. Early pregnancy combined with malnutrition, illiteracy, and poor health care cause serious socio-medical problems.[1] In this study, we have evaluated various outcomes of teenage pregnancy and the effect of antenatal care on these mothers from the hospital records.

As of 2019 adolescents aged 15-19 years in low- and middle-income countries had an estimated 21 million pregnancies each year, of which approximately 50% were unintended, resulting in an estimated 12 million births; 55% of unintended pregnancies among adolescent girls end in abortions, which are often. Child marriage and child sexual abuse place girls at increased risk of unintended pregnancy.[2] Multiple studies have shown an increased burden of pregnancy in adolescent females compared to that in adults, with adverse outcomes for both mothers and children. Adolescent mothers face a higher risk of eclampsia, puerperal endometritis & systemic infections than women aged 20-24 years, babies face a higher risk of preterm delivery, and low birth weight, and severe neonatal conditions.[3]

Factors such as socioeconomic status, physical immaturity, ongoing maternal growth, and nutritional status have been identified as contributors to adverse obstetric outcomes among adolescent mothers. Additionally, the negative consequences of

adolescent childbearing can affect mothers and their offspring throughout their lifespan and are likely influenced by social and environmental factors rather than maternal age alone.[4] The global adolescent birth rate is 64.5 births per 1000 women (15-19 years) in 2000 to 41.3 births per 1000 women in 2023. In India, from 2013-2021 ABR was 10.6 per 1000 adolescent women to 11.3 births per 1000 adolescent women in 2023. As adolescence is a transitional period of physical and psychological development between childhood and adulthood, pregnancy at this age can determine imbalances that can be transitory or can become chronic if they are not properly managed.[5]

Aim

This study aimed to determine the incidence of teenage pregnancy and study maternal and fetal outcomes in teenage pregnancy.

MATERIALS AND METHODS

This observational, retrospective study included 2925 pregnant patients, aged 12-19, who delivered in the Department of Obstetrics and Gynaecology at Government Medical College Hospital, Namakkal, a tertiary care unit, between April 2022 and March 2023. This study was approved by the Institutional Ethics Committee before initiation, and informed consent was obtained from all patients.

Inclusion criteria

Pregnant patients aged 12-19 were included.

Exclusion criteria

Pregnant patients aged > 19 were excluded.

Methods: The data collection process involved extracting information on maternal age, socioeconomic status, obstetric complications, neonatal health indicators, and pertinent details on providing healthcare services during and after pregnancy. Data regarding pregnancy outcomes, demographic variables, gestational age, antenatal history, mode of delivery, the weight of the baby, intra natal and postpartum complications, neonatal intensive care unit admission, stillbirth, and pregnancy-associated complications such as anaemia, preterm birth, hypertensive disorder of pregnancy, GDM, seizure disorder, and HIV infection were collected from hospital records.

Statistical analysis: The obtained data were entered into Microsoft Excel 2019 and analysed using the same method. Data are presented as descriptive statistics, such as frequencies and percentages.

RESULTS

In one year, 2925 deliveries were made in the hospital, 222 of which were adolescent pregnancies [Figure 1].

Among deliveries, normal vaginal delivery was the most common, accounting for 110 (49.55%), caesarean section accounted for 104 (46.85%) and assisted deliveries occurred in 8 (3.6%) patients. Maternal medical complications among the patients included anaemia, which was the most common in 47 (54.02%) patients, followed by pregnancy-induced hypertension in 32 (36.78%), gestational diabetes mellitus in 4 (4.6%), seizure disorder in 3 (3.45%), and PLHA (people living with HIV/AIDS) in 1 (1.15%) patient.

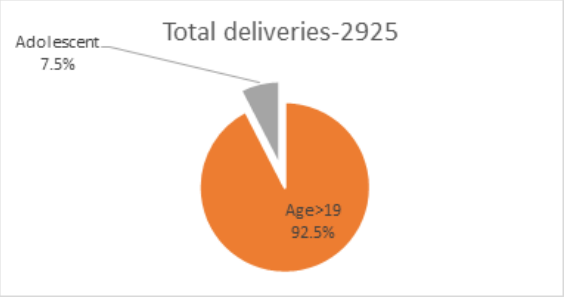

Figure 1: Incidence of adolescent pregnancy

The most common neonatal complications were low birth weight in 62 (60.79%) patients, preterm birth in 38 (37.25%), and neonatal death in 2 (1.96%). For birth weights, 5 (2.25%) neonates weighed between 1-1.5 kg, 11 (4.95%) neonates between 1.6-2 kg, 46 (20.72%) neonates between 2.1-2.5 kg, and 160 (72.08%) neonates weighed > 2.5 kg [Table 1].

Table 1: Mode of delivery, maternal medical complications, and neonatal outcomes associated with adolescent pregnancy.

		Frequency (%)
Mode of delivery	Labour natural	110 (49.55%)
	Assisted vaginal delivery	8 (3.6%)
	LSCS	104 (46.85%)
Maternal medical complications	Anaemia	47 (54.02%)
	PIH	32 (36.78%)
	GDM	4 (4.6%)
	Seizure disorder	3 (3.45%)
	PLHA	1 (1.15%)
Neonatal complications	Low birth weight	62 (60.79%)
	Preterm birth	38 (37.25%)
	Neonatal death	2 (1.96%)
Birth weight (kg)	1-1.5	5 (2.25%)
	1.6-2	11 (4.95%)
	2.1-2.5	46 (20.72%)
	>2.5	160 (72.08%)

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Table 2: Obstetric complications, abortion, and contraception associated with adolescent pregnancy

		Frequency (%)
Obstetric Complications	HELLP	1 (2.38%)
	CPD	28 (66.67%)
	PPH	13 (30.95%)
Abortion	Missed abortion	6 (19.35%)
	Incomplete abortion	8 (25.81%)
	Molar pregnancy	4 (12.90%)
	Spontaneous expulsion	13 (41.94%)
Contraception	PPIUCD	188 (74.31%)
	Centchroman Tablets	6 (2.37%)
	Medroxy Progesterone Acetate injection	12 (4.74%)
	No coverage	47 (18.58%)

Among obstetric complications, HELLP was observed in 1 (2.38%) patient, cephalopelvic disproportion was the most common, affecting 28 (66.67%) patients, and postpartum haemorrhage occurred in 13 (30.95%) patients. Additionally, 6 (12.35%) patients had missed abortions, 8 (25.81%) had incomplete abortions, 4 (12.90%) had molar pregnancies, and 13 (41.98%) experienced spontaneous expulsion abortions.

Most adolescents, 243 (96.05%) were married and conceived within a year of marriage. Of the 253 patients, 206 (81.42%) used temporary family planning methods after delivery. Among them, 188 (74.31%) underwent PPIUCD insertion, 6 (2.37%) preferred Centchroman tablets, and 12 (4.74%) preferred medroxyprogesterone acetate injections, while 47 patients (18.58%) were discharged without coverage. Pre-conception contraceptive usage was minimal, often considered taboo by many couples or had no awareness at all [Table 2].

DISCUSSION

In our study, the patients who delivered were aged between 12-19. Talawar et al. results were seen where the mean age of the study participants was 18.5 years.[6] In our study, evidence of unmarried or unintended pregnancy was discovered among the adolescent mothers who were admitted, some underwent abortion and some delivered term babies, which accounted for 10 (3.92%) patients. The reason for early marriage was influenced by community and family traditions, in and around the locality teen marriage was found common which was contrary to a Marvin et al. cohort study done in England which showed 13.6% were married.[7]

In our study, labour natural 110 (49.55%) was found to be the most common mode of delivery, which was similar to Jaihow et al. reported that 59.7% of deliveries were normal vaginal deliveries.[8] In our study, maternal medical complications were found in 87 patients, the most common being anaemia found in 47 (54.02%), followed by PIH 32 (36.78%) patients, which is similar to findings in Talawar et al. reported that there was an increased incidence of anaemia, preeclampsia, preterm delivery, and PROM compared to the control group.6 Another study by Nguyen et al. using NFHS data added that anaemia was common among teen mothers hailing from poorer living standards and low socioeconomic class.[9]

Our study also showed that the most common neonatal complication was low birth weight in 62 (60.79%), followed by preterm delivery 38 (37.25%). Banda et al. found that low birth weight was present in 72 (14.6%, 95% CI 11.7,17.9), and 46 (9.3%, 95% CI 7.0,12.1) had birth weights > 3500 g, and in a similar study conducted by Honorato et al., the incidence of low birth weight was 16.1% for the 10–13 age group, 8.7% for the 14–15 age group, and 12.1% for the 16–17 age group.[10,11]

In our study, birth weights from, 1-1.5 neonates weighed 5 (2.25%), in 1.6-2 were 11 (4.95%), in 2.1-2.5 were 46 (20.72%), and in > 2.5 were 160 (72.08%). Of the patients 6 (12.35%) had missed abortions, 8 (25.81%) had incomplete abortions, 4 (12.90%) had molar pregnancies, and 13 (41.98%) had spontaneous expulsion abortions. Shri et al. reported that 19% of adolescents had an adverse pregnancy outcome (miscarriage, stillbirth, or abortion).[12]

CONCLUSION

The findings underscore the need for comprehensive, evidence-based interventions that encompass socio-economic support, access to quality healthcare, and educational initiatives tailored to the specific needs of adolescent mothers. Increasing educational attainment, preventing repeat pregnancies, improving mother-child interactions, and providing optimal healthcare targeting specific areas within this population are crucial for mitigating the adverse outcomes of adolescent pregnancy.

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