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Original Research Article

Prevalence of teenage pregnancy and pregnancy outcome at a rural teaching hospital in India

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ABSTRACT

Background: Teenage pregnancy accounts for 11% of births worldwide and 95% of these occur in low middle income countries. Pregnancy and its complications are leading cause of death among these girls. This study was done to know the prevalence and to determine whether teenage mothers are at risk of adverse pregnancy outcome.

Methods: A retrospective study was conducted at a tertiary teaching hospital, India between July 2015 to Dec, 2017. All teenage mothers delivered after 28 weeks of gestation were included. Women with Diabetes mellitus, renal disease, thyroid disorders were excluded. Demographic data, maternal complications like anaemia, hypertensive disorders of pregnancy, preterm birth, mode of delivery, low birth weight, NICU admissions, stillbirth and early neonatal death were recorded.

Results: In the present study, the prevalence was 7% which is less than that of other studies. Incidence of caesarean-section in the present study was 31%. Amongst the complications oligohydramnios was found to be significantly associated with teenage pregnancy. NICU admissions were needed for 43% of the cases and 31% were LBW.

Conclusions: High NICU admission and high LBW in newborns of teenage mothers were noted in the current study. Hence, there is urgent need to focus on the teenage pregnancy.

Keywords: LBW, NICU, Oligohydramnios, Teenage pregnancy

INTRODUCTION

According to World Health Organization, Teenage Pregnancy is “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.^{1,2} Teenage pregnancy is very important health as well social issue in today’s world. Teenage pregnancy accounts for 11% of births worldwide. According to UNICEF, worldwide every 5th child is born to teenage mother.³ 90% occur in low middle income countries.⁴ Unlike developed countries where majority of teenage pregnancy occurs in unmarried girls, in India majority of teenage pregnancies are because of teenage marriages. Even though adolescent marriage is

cognizable offence in India, it is still a common practice in many parts of the country. Pregnancy and its complications are leading cause of death among these girls.³ Teenage pregnancies have shown associations with preterm birth, low birth weight, perinatal death, miscarriage, obstructed labour, STI, puerperal sepsis, mental illness and maternal death. However, the evidence is conflicting and may be explained by the heterogeneity of the study settings, sample sizes.⁵⁻⁸ Hence, there is a need for the studies, especially from low income countries where most of the adverse obstetric outcomes happen. So, we aim to determine whether these pregnancies are associated with adverse maternal and

perinatal outcome compared to mothers more than 20 yrs at a rural tertiary teaching hospital, India.

METHODS

This is a retrospective observational study conducted at Medici Institute of Medical Sciences, a rural tertiary teaching hospital located 35 km from the city of Hyderabad in Telangana state, India. All pregnancy cases less than 19 years of age constituted the study group and women between 20 to 35 years of age formed the control group.

All deliveries in the hospital and pregnancy outcomes are reviewed. Using each woman's unique medical record number, case files were obtained, and data were obtained on demographic variables and associated complications such as anaemia, hypertensive disorders of pregnancy, preterm birth, polyhydramnios etc. Data regarding mode of delivery, gestational age at delivery, weight of the baby, NICU admission, still birth, IUD were recorded. Gestational age was obtained by last menstrual period and confirmed by dating scan. First trimester dating

ultrasound was used where date of last menstrual period was not known. Pre-eclampsia is defined as hypertension at > 20 weeks of pregnancy, combined with proteinuria.⁹ Gestational hypertension is defined by an elevated BP at or beyond 20 weeks of gestation in the absence of proteinuria.¹⁰ Polyhydramnios is defined as Amniotic fluid index >24cm.¹¹ Amniotic fluid index (AFI) of <5 is defined as oligohydramnios. Preterm delivery is defined as spontaneous or iatrogenic delivery before gestational week 37.^{12,13} Low birth weight (LBW) is defined as weight less than 2500 grams at birth regardless of gestational age.¹⁴ Anaemia during pregnancy is defined as hemoglobin (Hb) concentration less than 11g/dL.¹⁵ Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with the onset or first recognition during pregnancy with or without remission after the end of pregnancy.¹⁶

RESULTS

Out of 4837 deliveries that occurred at MIMS from July 2015 to Dec 2017, 356 deliveries occurred were teenage mothers giving the prevalence rate of 7%.

Table 1: Demographic profile of the teenage mothers.

Parameters (Gravidity)	Case (%)	Control (%)	Odds Ratio	C.I	P Value
Primi	306 (86%)	129 (36%)	10.5	7.29-15.1	0.0001
Multi	51 (14%)	227 (64%)	0.09	0.06-0.13	0.0001
Parameters (Religion)					
Hindu	334 (94%)	337 (95%)			
Muslim	20 (5.5%)	19 (5%)			
Christian	2 (0.5%)	0 (0%)			
Booked/ Unbooked					
Booked	340 (96%)	326 (92%)			
Unbooked	16 (4%)	30 (8%)			

Table 2: Distribution of complications seen with teenage pregnancies and the control group.

Complications	Case (%)	Control (%)	Odds Ratio	C.I	P Value
Anaemia	155 (44%)	154 (43%)	1.01	0.75-1.36	0.93
PIH	31 (9%)	30 (8%)	1.03	0.61-1.75	0.89
Oligohydramnios	27 (8%)	9 (3%)	3.1	1.46-6.82	0.003
Preterm delivery	32 (8%)	19 (5%)	1.75	0.97-3.15	0.061
GDM	5 (0.01%)	4 (0.01%)	0.49	0.09-2.73	0.4

There were 306 (86%) primigravidas and 51(14%) multigravidas in the study group, while 129(36%) were primigravidas and 227(64%) were multigravidas in the control group. The proportion of primigravidas were high in the teenage women (OR=10.5,95%CI 7.29-15.1. P <0.0001). Most of the women in both the groups belonged to low socio-economic status (Table 1). Most women (96% in the study group and 92% in the control group) has registered themselves at our institute and had regular ANC visits. Most of the women were Hindus

(94% and 95% respectively). The prevalence rate of teenage pregnancy was 7%. Only 14% were multigravida. Most of the patients were Hindus (94%) and were booked cases (96%). Anaemia was the most common complications seen in the teenage women (44%) but was not different from the control group (43%) (Table 2). Oligohydramnios was seen in 8% of teenage women and only in 3% of the control group and was found to be significant (OR 3.1,CI1.46-6.82,P0.003).GDM accounted for only 0.01% of the cases

in both the groups. Majority of the women in both the groups delivered vaginally (59.5% vs 42.1%; OR 1.85,95%CI-1.35-2.48,P=0.0001). Instrumental vaginal delivery was 8.9% and 5.3% respectively and there was no statistically significant difference (Table 3). Caesarean section were 31.4% and 50.2% respectively in the study and control group and was found to be statistically

significant (P=0.0001). The incidence of LBW in teenage women and control group was 31% and 26% respectively. However, it was not statistically significant P=0.08. NICU admission was required in 43% and 34% of the babies in the study and control groups respectively (Table 4).

Table 3: Mode of delivery in both the groups.

Mode of Delivery	Case (%)	Control (%)	Odds ratio	C.I	P Value
Normal vaginal delivery	212 (59.5%)	158 (42.1%)	1.85	1.38-2.48	0.0001
Instrumental (forceps + vacuum) delivery	32 (8.9%)	19 (5.3%)	1.75	0.97-8.15	0.061
LSCS	112 (31%)	179 (50%)	0.33	0.33-0.61	0.0001

Table 4: Neonatal outcome in both the groups.

Neonatal complications	Case (%)	Control (%)	Odds Ratio	C.I	P Value
NICU	154 (43%)	122 (34%)	1.46	1.07-1.98	0.01
LBW	112 (31%)	91 (26%)	1.33	0.96-1.85	0.08
IUD	6 (02%)	5 (02%)	1.2	0.36-3.9	0.76

DISCUSSION

According to the National Health Survey -4, Telangana has the second highest number of teenage pregnancy cases in south India. In rural areas, the number of teenage pregnancy cases was 13.8% as opposed to 6.6% in urban areas.¹⁷ The prevalence of teenage pregnancy in our study was 7% which was par with the numbers quoted by NHFS –data. This may be explained by the fact that this area is slowly transforming into peri urban area. Still low rates of teenage pregnancies were quoted by Gazala Yasmin et al study 5.1% and Dubashi et al(4.5%).^{18,19} Teenage pregnancy, where the maternal age is 19 years or less is associated with health risk for both mother and the fetus which are sometimes life threatening. The current study is a retrospective study from July 2015 to Dec 2017. A total of 356 teenage pregnancies were included in the study. Over the past decade, India has significantly reduced the portion of pregnancies between 15-19 years to half 16% during NFHS3 in 2005-06 and 7.9% during NFHS -4 in 2015-16).¹⁷ Most of the women were primigravidas in the teenage group (86%) which is in consistent with the study by Mahavarkar et al where 86.85% of teenage women were primigravidas.²⁰ In the current study, the proportion of women who booked for antenatal care was very high (96%) as all women are married and childbearing is often accepted socially, and pregnancies were planned. Also, easy access to medical facility at hospital also contributed to high rates of booking. On the contrary, most high-income countries have low teenage pregnancy rates and majority of the pregnancies are amongst unmarried teenagers. Teenage pregnancy carries high risk to both mother and infant. Anaemia was the most common complication seen in the current study. Generally, the cause of anaemia is not the

young age of the adolescent mother. It is often caused by the nutritional deficiencies, especially iron and folic acid, and in low income countries by malaria and hookworm infection. In a study by Mahavarkar et al, anaemia was also the most common complication seen.²⁰ The second most common complication seen was PIH (9%) as the number of nulliparous women were much higher and because in first pregnancies, the incidence of hypertension disorders is higher than second pregnancies. A slightly high rate of PIH was reported in Mahavarkar study.²⁰ However in the global Network Maternal Newborn Health Registry Study, compared to adult, adolescents <15 years showed a statically significant lower risk of hypertensive disorders(RR0.32.95% CI0.12-0.86).²¹

There was statistically significant difference in the incidence of oligohydramnios in the adolescent group compared to the control group in the current study (P=0.003). However, this condition could not be compared as this complication was not studied in other studies. A good number of studies both populations based and hospital-based studies from many countries published till date, comparing the risk of preterm in teenage verses adult pregnant women. Most of the studies found more preterm births in adolescents and made it clear that maternal age is an important independent factor. Our rate of preterm (8%) was almost in agreement with Althabe et al study.²¹ The caesarean rate was higher at 31% in the present study. This can be explained by the fact that pelvic bones and the birth canal are still immature and may cause obstructed labour.] Mukhopadhyay et al also quoted a higher rate (34%).²² LBW rate was high in the current study (31%). A number of hospital-based studies in developing countries have shown higher incidence of

LBW babies among adolescent mothers (Bacci et al LBW will be closely associated with preterm birth.²³ NICU admission were also high in the study group (43%) as LBW were high in this group.

CONCLUSION

Teenage pregnancy with prevalence of 7% is still a major problem in our Indian society. Knowing the facts that teenage pregnancy is associated with major complications of pregnancy both maternal and neonatal, there is urgent need to focus and decrease the teenage pregnancy in our society.

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