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RESEARCH ARTICLE

MATERNAL AND FETAL OUTCOME IN TEENAGE PREGNANCIES

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ABSTRACT

Aims: To study the maternal and fetal outcome in teenage pregnancies.
Settings and design: This is a retrospective study done over a period of 1 year in Subbaiah Medical College and Hospital, Bangalore from 1st april 2015 to 31st march 2016. Data was collected with information covering maternal risk factors and obstetric outcome after fulfilling the inclusion and exclusion criteria.
Materials and methods: 200 women with teenage pregnancies (13-19 yrs) were evaluated for maternal risk factors and obstetric outcome. 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. MS Excel was used for statistical purpose.
Results: Teenage pregnancy comprised 5.57% of the total Obstetric admissions. In this study 52% teenage pregnancies were associated with complications. The major maternal complications were Preterm labour 26.9%, Anemia (22.11%), Hypertensive Disorders of Pregnancy 15.38%, Premature Rupture of Membranes 15.38%,. Low Birth Weight 17%, preterm births 23% and NICU admissions 6% were major adverse fetal outcomes.
Conclusion: Teenage pregnancy has adverse impact on the health of teenage mothers leading to various adverse maternal and fetal outcome.

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INTRODUCTION

According to WHO the period of adolescence extends from 11-19 years. Pregnancy during this period is called teenage pregnancy (Ashok Kumar *et al.,* 2007; Suwal, 2012). Teenage pregnancy is one of the most important social and public health problems all over the world with varying prevalence rate (Ashok Kumar *et al.,* 2007; Gordon *et al.,* 2001). Teenage pregnancy represents a high risk group in reproductive terms because of the double burden of reproduction and growth (PriankaMukhopadhyay *et al.* 2010). According to UNICEF, worldwide every 5th child is born to teenage mother (UNICEF, 2001). The incidence of teenage pregnancies varies dramatically between the different countries. Teenagers make up more than one billion i.e., nearly one fifth of the world population (Pun *et al.,* 2011). The aim of this study was to compare several obstetric characteristics and outcomes of teenage women. Teenage or adolescent period of females is the transitional stage of physical and mental development between childhood and adulthood. Therefore, pregnancies occurring in teenage girls are generally classified to have a higher risk than those in adult females. Teenage pregnancy is an important public health problem in both developed and developing country, as it is a 'highrisk' 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. 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.

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MATERIALS AND METHODS

This is a retrospective study done over a period of 1 year in Subbaiah Medical College and Hospital from 1st April 2015 to 31st March 2016. 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. Data was collected with information covering maternal risk factors and obstetric outcome after

fulfilling the inclusion and exclusion criteria. MS Excel was used for statistical purpose.

RESULTS

During the study period, 200 pregnant teenage women were delivered at Subbaiah medical college and Hospital, from the total of 3,589 deliveries. Giving an incidence of 5.57% of teenage pregnancy (Figure 1).

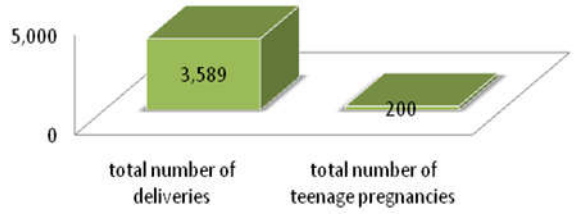

Figure 1. Number of teenage pregnancies during the study

Maternal Complication

Out of the 200 teenage pregnancies, 104 were associated with complications (52%) and the remaining 96 were without any complication (48%). Amongst the 200 TAP 180 were booked (90%) and remaining 20 were unbooked (10%). Table 1 shows the common complications associated with teenage pregnancies. The most common complication associated with teenage pregnancies during third trimester was Preterm labor (28), 23 mothers had anemia, 16 had hypertensive disorders, 16 had premature rupture of membranes, 8 had intrauterine growth retardation.

Table 1. Complications associated with teenage pregnancy

Complications	Number (n=104)	Percentage
Preterm labor	28	26.9%
Anemia	23	22.11%
Hypertensive disorders	16	15.38%
Premature rupture of membranes	16	15.38%
Intrauterine growth retardation	8	7.69%
Oligohydramnios	6	5.76%
Malpresentation	4	3.8%
Antepartum hemorrhage	2	1.92%
Multiple pregnancy	1	0.96%

Mode of delivery

Out of 200 teenage mothers who delivered majority 152 had vaginal delivery (76%), remaining 48 teenage mothers delivered by Caesareans section, 42 had emergency C-section (21%), 6 had elective C-section (3%)

Table 2. Mode of delivery

Mode of delivery		Number (n=200)	Percentage
Vaginal delivery	Spontaneous	148	74%
	Vacuum extraction	4	2%
Caesarean section	Emergency	42	21%
	Elective	6	3%

Indication for caesarean section

Majority of the elective caesarean sections were due to CPD. It was followed by fetal distress, failed induction. The other indications were PROM, oligohydramnios, malpresentation, IUGR, multiple pregnancies. Out of the 6 elective C-sections, 2 were for breech presentation, 2 were for IUGR, 1 was placenta previa, 1 was for contracted pelvis.

Table 3. Indications for caesarean section

Indication	Number (n=42)	Percentage
CPD	20	47.6%
Fetal distress	6	14.2%
Failed induction	5	11.9%
PROM	3	7.14%
Oligohydramnios	3	7.14%
Malpresentation	2	4.7%
IUGR	2	4.7%
Twin gestation	1	2.3%

Post-partum complication

Amongst 10 patients who had post-partum complications, 7 patients had PPH (3.5%), others complications were perineal tear (0.5%), perineal hematoma formation (0.5%), puerperal infection (0.5%).

Table 4. Post Partum complications

Complications	Number (n=10)	Percentage
PPH	7	3.5%
Perineal tear	1	0.5%
Perineal hematoma	1	0.5%
Puerperal infection	1	0.5%

Fetal outcome

Majority 154 out of 200 babies were healthy babies (77%) remaining 46 were preterm (23%). The most common adverse fetal outcome noted in the study was low birth weight babies (34). Amongst 12 babies who needed NICU admissions, 7 were low birth weight babies.

Table 5. Fetal outcome of teenage pregnancy

Fetal outcome	Number (n=200)	Percentage
Alive and healthy (term)	154	77%
Preterm	46	23%
Low birth weight	34	17%
NICU admission	12	6%
Apgar <7 at 1min	8	4%
<7 at 5min	5	2.5%
RDS	4	2%
IUGR	6	3%

DISCUSSION

- Incidence of teenage pregnancy is 5.57% in the present study whereas other studies showed the incidence ranging from 8.3-23.4% (Ashok Kumar *et al.,* 2007; Suwal, 2012; Sabry *et al.,* 2010; Nusrat Shah *et al.,* 2011; Bhalerao *et al.,* 1990). We did not come across any unmarried teenage mother in our study. It is common practice for unmarried mothers to go for termination of pregnancy (Ashok Kumar *et al.,* 2007; SupananChairaj *et al.,* 2010). No abortion was found in the group.

- Incidence of preterm labor, anemia, hypertensive disorder and premature rupture of membranes were found to be significantly higher in the present study. This is in accordance with previous studies (Ashok Kumar *et al.,* 2007; Pun and Chauhan, 2011; SupananChairaj *et al.,* 2010; VorapongPhupong and

KengSuebnukarn, 2007; Jolly *et al,* 2000; Sabry *et al.,* 2010; ChutatipTantayakom and JaparathPrechapanich, 2008; CandanIltemir DUVAN *et al.,* 2010; Bhalerao *et al.,* 1990), and in contrast others showed no difference in incidence of anemia (Suwal, 2012; Sabry *et al.,* 2010). Gestational diabetes mellitus was less common in younger women (Jolly *et al,* 2000; Sabry *et al.,* 2010; CandanIltemir DUVAN *et al.,* 2010). 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, 2008, 13.2% by Sharma *et al.* 2003 and 48% by Mahajan, 2007. The present study revealed it to be 26.9%. The second most common complication was observed to be Hypetensive Disorders as reported 14.2% by Sharma *et al*. 2002 10.6% by Sarkar *et al.* 1991 and more than 13.05% by Padte *et al.* 1989. In contrast the present study showed a incidence of 15.38%. Saxena *et al.* 2001 reported an incidence of IUGR to be 5.5% in teenage mothers which is lower than the present study (7.69%).

- Incidence of C-Section in the present study was 24%. Majority of Cesarean Sections were due to CPD. It was followed by fetal distress (14.2%), failed induction (11.9%), premature rupture of membranes (7.14%), Malpresentation (4.7%). The common indication for caesarean section in our study is Cephalopelvic disproportion. This is in accordance with previous studies[13]. The incidence of CS among teenage mothers were reported 6% by Bhalerao *et al.* 1990 34% by Mukhopadhyay, 2010 and 26% by Dubashi, 2008. These studies too report Fetal distress, CPD and Contracted Pelvis to be leading causes for Caesarean Section amongst Teenage mothers.

- Incidence of preterm delivery is statistically significant in our study; this is in accordance with previous studies (Ashok Kumar *et al.,* 2007; Gordon *et al.,* 2001; Pun and Chauhan, 2011; SupananChairaj *et al.,* 2010; VorapongPhupong and KengSuebnukarn, 2007; Sabry *et al.,* 2010; CandanIltemir DUVAN *et al.,* 2013; Bhalerao *et al.,* 1990; Rahman *et al.,* 2010). Others have shown no significant statistical significance in preterm delivery (Suwal, 2012; Sabry *et al.,* 2010; Nusrat Shah *et al.,* 2011; Nathalie *et al.,* 2012).

- In the present study 34 (17%) were Low Birth Weight Babies, 12 (6%) needed NICU admission. Other Indian studies found the incidence of LBW babies between 33 and 39% (Ambadekar *et al.,* 1999) and the incidence of Stillbirth around 4-5% (Saxena *et al.,* 2001; Bhalerao *et al.,* 1990). In the Pacific Islands, study undertaken by Swati Mahajan (Mahajan, 2007) reported an incidence of LBW to be 19%.

Comparision with other studies

	Present study	Other studies
Incidence	5.57%	3-10 (Indian studies-Ambedkar *et al.,* Dubashi SS17, Bhalerao *et al.*, Mahavarkar *et al.,*) 21-35 (developing countries-Nepal, Nigeria, Bangladesh) <5 (developed countries-UK, USA, Japan, Switzerland)

Maternal complications

	Present study (%)	Other studies (%)
Preterm labour	26.9	10.56 (Dubashi SS) 16.0 (Bhalerao *et al.*) 48.0 (Mahajan S)
Hypertensive disorders	15.38	10.6 (Sarkar *et al.*) 13.05 (Padte *et al.*) 14.2 (Sharma *et al.*)
Anemia	22.11	>25 (Rahman *et al.*, Bhalerao *et al.*, Saxena *et al.*)

Delivery outcome

	Present study (%)	Other studies (%)
Caesarean section	24	6.0 (Bhalerao *et al.*) 26.0 (Dubashi SS) 4. Fetal outcome 34 (Mukhopadhyay P)

Fetal outcome

	Present study (%)	Other studies (%)
IUGR	3	5.5 (Saxena *et al.*)
LBW	17	33-39 (Saxena *et al.,* Mukhopadhyay P, Ambedkar *et al.,*)

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