

THE EFFECTS OF TEENAGE PREGNANCY ON OBSTETRICS AND NEONATAL OUTCOME: AN OBSERVATIONAL STUDY.

Dr. Nutan Narayan¹, Dr. Dipti Roy²

¹Assistant Professor, Department of Obstetrics and Gynecology, Nalanda Medical College and Hospital, Patna, Bihar.

²Associate Professor, Department of Obstetrics and Gynecology, Nalanda Medical College and Hospital, Patna, Bihar.

Article Info: Received 15 March 2020; Accepted 28 May 2020

DOI: <https://doi.org/10.32553/ijmbs.v4i6.1337>

Corresponding author: Dr. Dipti Roy

Conflict of interest: No conflict of interest.

Abstract

Aim: to study the effects of teenage pregnancy on obstetrics and neonatal outcome.

Materials and methods: The present prospective comparative interventional study was conducted in the Department of Obstetrics and Gynecology, Nalanda Medical College and Hospital, Patna, Bihar. Total 60 patients were divided in to two groups.

Results: Majority of the patients (66.9%) were in the 18-20 years of age group. Pre-eclampsia was observed in 26.7% of the patients who didn't receive vitamin D supplement whereas the group I which received supplementation showed on pre-eclampsia in 6.7% of the patients ($p=0.001$).

Conclusion: This study concludes that there is significant role of vitamin D supplementation in pregnant women in prevention of pre-eclampsia.

Keywords: pre-eclampsia, vitamin D, neonatal outcome, teenage

Introduction

In healthy, well-nourished girls, menarche normally takes place around the ages twelve or thirteen. The transition from childhood to adulthood referred as 'adolescence' or 'teenage', which has been defined by the World Health Organization as the period between 10-19 years.¹ This is the period when structural, functional, mental and psychosocial developments occur in a child to prepare her for assuming the responsibility of motherhood. The needs of wellbeing of girls in this age group, in India, however are neglected.

In India, there are over 10 million pregnant teenagers and teenage mothers in India, with one in six girls age 13-19 years beginning child bearing. But these girls are prepared neither physically nor emotionally for pregnancy and motherhood. Teenagers who marry between aged 15-19 years could bear on average 6-7 children over the course of their lives.²

Previous studies have reported an increased incidence of adverse maternal and perinatal outcomes, such as low birthweight,³⁻⁶ preterm delivery,³⁻⁶ perinatal death,^{4,7} cephalo- pelvic disproportion^{8,9} and maternal death.^{5,10} However, there were conflicting findings from previous studies as to whether the adverse pregnancy outcomes among adolescent mothers were caused by their biological immaturity³⁻⁵ or poor socio-environmental factors.^{6,11,12} This may be explained by the heterogeneity between study settings, small sample size, especially for younger

adolescents (i.e. ≤ 15 years), and the quality of medical services and women's social and cultural backgrounds.

In view of the past and conflicting observations the present study was conducted with the aim to study the effects of teenage pregnancy on obstetrics and neonatal outcome.

Materials and method

The present prospective observational study was conducted in the Department of Obstetrics and Gynecology, Nalanda Medical College and Hospital, Patna, Bihar

Inclusion criteria

- Age between 15-20 years
- Single pregnancy
- Period of gestation ≥ 28 weeks
- Who give informed consent

Exclusion criteria

- Age above <15 years and >20 years
- Gestational age <28 weeks
- Not willing to participate

Ethical approval and Informed consent

The study protocol was reviewed by the Ethical Committee of the Hospital and granted ethical clearance. After explaining the purpose and details of the study, a written informed consent was obtained.

Sample selection

The sample size was calculated using a prior type of power analysis by G* Power Software Version 3.0.1.0 (Franz Faul, Universitat Kiel, Germany). The minimum sample size was calculated, following these input conditions: power of 0.80 and $P \leq 0.05$ and sample size arrived were 124 participants in each group.

Methodology

A comprehensive general physical examination, systemic and obstetric examination was conducted at first antenatal visit for all the subjects were done.

Statistical analysis

The recorded data was compiled entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to data editor page of SPSS version 20 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages, means and standard deviations were calculated.

Results

Table 1: demographic profile of the study population

Variables	N (%)
Age (Years)	
15-17	41 (33.1%)
18-20	83 (66.9%)
Mean±SD	18.23±1.01
Education	
Illiterate/ Read and write	35 (28.2%)
Primary	66 (53.2%)
Higher Secondary	21 (16.9%)
Graduate	2 (1.6%)
Socioeconomic Status	
Upper	14 (11.3%)
Middle	42 (33.9%)
Lower	68 (54.8%)
Residence	
Rural	78 (62.9%)
Urban	18 (14.5%)
Peri-Urban	28 (22.5%)
Total	124 (100.0%)

Table 2: Obstetric Outcome in the study population

Outcome	N (%)
Gestational Hypertension	47 (37.9%)
Pre-eclampsia	38 (30.6%)
Eclampsia	31 (25.0%)
Anemia	29 (23.4%)
IUGR	18 (14.5%)
LSCS	76 (61.3%)

Table 3: Neonatal outcome in the study population

Outcome	N (%)
LBWB	21 (16.9%)
NICU admission	18 (14.5%)
Perinatal Death	5 (4.0%)

Discussion

Teenage pregnancy remains major health issue in our country due to prevailing social dogmas, age old traditions and poor access to health care in remote rural areas, illiteracy leads to lack of knowledge about family planning and puts the adolescents at risk for early pregnancy. Education play major role in decreasing the incidence of teenage pregnancy and its attendant health risks and psychological issues.

So, it's important to reduce the incidence of teenage pregnancies in order to reduce the incidence of maternal and fetal morbidity associated with teenage pregnancy. Effect of teenage pregnancy remains for the teen mother and her child even after adjusting for those factors that increased the teenager's risk for pregnancy, such as growing up in poverty, having parents with low levels of educations, growing up in single parent family, having poor performance in school. Along with that it has its long-term implications on maternal health like chronic anaemia, risk of cervical cancer, risk of molar pregnancy and invasive mole, uterine prolapse, genital tract injuries like fistula, pelvic inflammatory disease, sexually transmitted diseases.

In our study the majority (66.9%) of the teenage mothers belongs to 18-20 years of age group and rest 33.1% of the mothers belong to 15-17 years of age. The overall mean age was 18.23 years. This is comparable to other studies.^{13,14}

Most of the teenage mothers (54.8%) belonged to lower socioeconomic status. It prevents them to take benefit from available facilities. That is why more teenage mothers were associated with pregnancy related complications. This was found in agreement with the previous studies.¹⁵⁻¹⁷

In the present study 61.3% of the mothers had undergone cesarean delivery. The incidence of CS among teenage mothers were reported 6% by Bhalerao et al.¹⁸, 34% by Mukhopadhyay P⁷ and 26% by Dubashi SS.¹⁹ These studies reported that fetal distress, CPD and Contracted Pelvis to be leading causes for Cesarean Section amongst teenage mothers.

In developing countries more than 25% of teenage mothers were found to be anemic as revealed in studies conducted by Saxena et al.²⁰ and Bhalerao et al.¹⁸ and Rahman MM et al.²¹ In contrast to it our study found a lower incidence (8.12%). This was found in similarity with the results of the present study. Saxena et al.²⁰ reported an incidence of IUGR to be 5.5% in teenage mothers which is lower than the present study (14.5%).

Many studies have reflected poor perinatal outcome in the form of LBW, preterm delivery and increased perinatal mortality^{22,23} which is in accordance with the present one.

There is a significant association between young age of mother and low birth weight even in developed countries. Babies born to teenagers are more likely than those born to women in their 20s to be born early and to weigh less than 2,500 g at birth. Further research suggests that these risks vary by age even among teenage mothers; younger mothers having the worst outcomes.²⁴ Some of the explanations proposed for these adverse birth outcomes are biological. Biological immaturity in teenage mothers itself is an inherent risk factor for poor outcome and even adequate prenatal care does not completely eliminate the risk.

The limitation of this study is that it is a hospital-based study and therefore may not be a true reflection of the situation in the community. It is possible that some cases of teenage pregnancy did not come to the hospital because of poverty, ignorance or social reasons.

Conclusion

The present study aimed to evaluate the outcomes and complications of teenage pregnancy. It was also concluded from the present study that Hypertensive Disorders of Pregnancy, Pre-eclampsia, anemia, IUGR and LSCS were major maternal outcome; Low Birth Weight and NICU admission were major adverse fetal outcomes.

References

1. Programming for Adolescent Health and Development. WHO Technical Report Series. 1999; 886:1-217.
2. Bhatia BD, Chandra R. Adolescent mother. *Ind J Matern Child Health*. 1993; 4(3):67-70.
3. Chen CW, Tsai CY, Sung FC, Lee YY, Lu TH, Li CY, et al. Adverse birth outcomes among pregnancies of teen mothers: age-specific analysis of national data in Taiwan. *Child Care Health Dev* 2010; 36:232-40.
4. Chen XK, Wen SW, Fleming N, Demissie K, Rhoads GG, Walker M. Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study. *Int J Epidemiol* 2007;36:368-73.
5. Conde-Agudelo A, Belizan JM, Lammers C. Maternal-perinatal morbidity and mortality associated with adolescent pregnancy in Latin America: cross-sectional study. *Am J Obstet Gynecol* 2005; 192:342-9.
6. de Vienne CM, Creveuil C, Dreyfus M. Does young maternal age increase the risk of adverse obstetric, fetal and neonatal outcomes: a cohort study. *Eur J Obstet Gynecol Reprod Biol* 2009;147:151-6.
7. Mukhopadhyay P, Chaudhuri RN, Paul B. Hospital-based perinatal outcomes and complications in teenage pregnancy in India. *J Health Popul Nutr* 2010;28:494-500.
8. Harrison K, Rossiter C, Chong H. Relations between maternal height, fetal birth weight and cephalopelvic disproportion suggest that young Nigerian primigravidae grow during pregnancy. *Br J Obstet Gynaecol* 1985;92(Suppl. 5):40-8.
9. Ganchimeg T, Mori R, Ota E, Koyanagi A, Gilmour S, Shibuya K, et al. Maternal and perinatal outcomes among nulliparous adolescents in low- and middle-income countries: a multi-country study. *BJOG* 2013;120:1622-33.
10. Granja AC, Machungo F, Gomes A, Bergstrom S. Adolescent maternal mortality in Mozambique. *J Adolesc Health* 2001;28:303-6.
11. Loto O, Ezechi O, Kalu B, Loto AB, Ezechi LO, Ogunniyi S. Poor obstetric performance of teenagers: is it age- or quality of care-related? *J Obstet Gynecol* 2004;24:395-8.
12. Raatikainen K, Heiskanen N, Verkasalo PK, Heinonen S. Good outcome of teenage pregnancies in high-quality maternity care. *Eur J Public Health* 2006;16:157.
13. Nusrad Shah, Dileep Kumar Rohra, Samia Shuja, Nagina Fatima Liaqat, Nazir Ahmad Solangi, Kelash Kumar et al. Comparison of obstetric outcome among teenage and non-teenage mothers from three tertiary care hospitals of Sindh, Pakistan. *JPMA*. 2011; 61:962.
14. Prianka Mukhopadhyay, Chaudhuri RN, Bhaskar Paul. Hospital-based Perinatal Outcomes and Complications in Teenage Pregnancy in India. *J Health Popul Nutr*. 2010; 28(5):494-500.
15. Khandait D, Ambadekar N, Zodpey S, Vasudeo N. Maternal age as a risk factor for stillbirth. *Indian Journal of Public Health*. 2000; 44:28-30.
16. Shrestha S. Socio-cultural factors influencing adolescent pregnancy in rural Nepal. *International Journal of Adolescent Medicine & Health*. 2002; 14:101-109.
17. Rashid S. Emerging changes in reproductive behaviour among married adolescent girls in an urban slum in Dhaka, Bangladesh. *Reproductive Health Matters*. 2006; 14:151-59.
18. Bhalerao AR, Desai SV, Dastur NA, Daftary SN. Outcome of teenage pregnancy. *J Postgrad Med*.1990;36:136-9.
19. Dubashi SS, Wani R. Teenage pregnancy. *Bombay Hospital journal*. 2008;50(2): 236-39.
20. Saxena P, Salhan S, Chatopadhyay B, Kohli MPS, Nandan D and Adhish SV. Obstetrics and perinatal outcome of teenage and older primigravidae – A retrospective analysis. *Health and Population: Perspectives and Issues*. 2001; 33(1):16-22.
21. Rahman MM, Hasan M, Akhter S, Sultan P. Adolescent pregnancy complication and wastage in Bangladesh. *J. Nepal Paediatr*. 2010; 30(3):147-53.
22. Fraser AM, Fraser JE, Ward RH. Association of Young Maternal Age with Adverse Reproductive Outcomes. *NEJM* 1995; 332 : 1113-18.
23. Gortzak-Uzan L, Hallak M, Press F, Katz M, Shoham-Vardi I. Teenage pregnancy: risk factors for adverse perinatal outcome. *J Matern Fetal Med* 2001;10: 393-97.
24. Gale R, Seidman DS, Dollberg S, Armon Y, Stevenson DK. Is teenage pregnancy a neonatal risk factor? *J Adolesc Health Care* 1989; 10 : 404-8.