Original Article

Adverse Maternal and Fetal Outcomes of Adolescent Pregnancy

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Abstract

Objective: To determine the frequency of adverse maternal and fetal outcomes of adolescent pregnancy

Methodology: This cross sectional study was conducted during one year after the approval of synopsis from December 2015 to December 2016, at gynae and OBS department of LUMHS. All the adolescent primigravida mothers with a singleton pregnancy were included. All the women underwent normal vaginal deliveries and c-section. The maternal complication and neonatal outcome were assessed among study subjects. Data was recorded via predesigned proforma. Data was entered and analyzed by SPSS version 16.

Results: The totals of 369 pregnant women were assessed with adolescent pregnancy, their mean age was 17.8±1.5 years, and mean gestational age was 35.45±3.8 weeks. Anemia was found to be the most common maternal complication as 56.3% followed by PIH 31.97%, Preterm labour at 14.63%, Preeclampsia 18.69%, Eclampsia 22.76%. Low Birth weight was the most common complication 118(31.97%), stillborn was found to be 8(2.16%), early neonatal death 2.16 % and NICU admission was 7.58%. Anemia, eclampsia, preterm deliveries, and neonatal outcomes were statistically significant according to maternal age (p>0.05).

Conclusion: Teenage pregnancy was found to be associated with increased risk of anemia, pregnancy induced hypertension cesarean section and eclampsia. There are also increased risks of low birth weight, still born and admission to the neonatal intensive care units.

Keywords: Maternal complications, Neonatal outcome, Teenage Pregnancy

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Introduction

Adolescent pregnancy is becoming more common in developed countries, with more adverse perinatal and maternal outcomes.[1] There are several factors that contribute to adolescent pregnancy, and they may differ depending on the population.[2] Teenage pregnancy is common in developing countries outside of marriage, and it is frowned upon in many societies around the world.[2] According to numerous reports, the results of pregnancy are much worse for Pakistani teenage girls than for older age mothers.[3] Anemia was found to be three times more common in teenage mothers than in non-adolescent mothers.[3] Furthermore, teenage mothers had such a poorer pre-pregnancy BMI, were two times as inclined to have instrumental viginal deliveries, and were 3-fold more inclined to develop chorioamnionitis.[3,4] Adolescent pregnancy has been a matter of concern, with unintended pregnancy, biological immaturity, insufficient prenatal care, inadequate maternal nutritional status, and stress all having an effect on neonatal and obstetric outcomes. Adolescent pregnancy and poorer pregnancy outcomes are linked by cultural, socioeconomic, social, and geographic factors. Abortion, severe anaemia, preterm birth, pre-eclampsia, operative and mechanical deliveries, and cephalo-pelvic imbalance are also correlated with teenage pregnancies.[5,6] Adolescent births are a global issue that affects countries of all income levels. Adolescent births are more frequent in disadvantaged populations globally, owing to poverty,

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poor education, and inadequate job opportunities.[7] Teenage mothers are also more likely than females of age group 20-24 years to develop eclampsia, systemic infections, puerperal endometritis, and live births to teenage mothers are more likely to have preterm delivery, low birth weight, and serious neonatal complications than newborn babies of females of age groups 20-24 years.[7] Teenage expectant mothers can possibly not be as physically fit as a female in her 2nd decade of life to bear the financial strain of labour and pregnancy at such a young age. Adverse outcomes of adolescent pregnancy are caused by a variety of factors, including individual, socio-cultural, and familial factors, as well as inaccessibility to healthcare, contraceptives, and other services, which is the case in the majority of developed nations. Pregnancy associated complications, which may lead to maternal death, are more frequent among adolescent pregnant females because they are physically immature enough to satisfy the requirements of pregnancy.[8] However, this study aimed to find out how common adverse perinatal-maternal outcomes are during adolescent pregnancy.

Methodology

This cross sectional study was conducted during one year after approval of synopsis from December 2015 to December 2016, at gynae and OBS department of LUMHS. Non Probability consecutive sampling was used. All the adolescent primigravida with singleton pregnancy presented at LUMHS Jamshoro were included. All the teenage women, multigravida, multiple pregnancy, women with known co-morbidities and those who were not willing for participation in study were excluded. Women were informed regarding their participation in study and reassured that their data will be kept confidential. The data was collected from the women admitted in delivery room and from those admitted in the ward for any medical advice. All pregnant women were interviewed and relevant clinical examination was done and investigated. Women were assessed for antenatal complication, like anemia hypertensive disorder, natal complications include cesarean section, instrumental vaginal delivery, neonatal outcomes LBW and still born were noted. All data were recorded on predesigned proforma, which contain information on socio-economic variables of interest included age, level of education maternal outcomes and neonatal outcomes. Data was entered and analyzed in statistical program for Social Sciences SPSS version 16. The study was deal with qualitative maternal variables including anemia, PIH, Pre eclampsia, eclampsia, preterm delivery, cesarean section, instrumental vaginal delivery. Qualitative neonatal variables were stillborn and LBW. Frequencies and percentages were calculated for all qualitative variable. Mean and standard deviation were calculated for maternal age and gestational age. Stratification was done with respect to maternal age, gestational age and level of education to see the effect of all outcomes. Post stratification chi square was applied. $P \leq 0.05$ was considered as significant.

Results

The totals of 369 pregnant women were assessed with adolescent pregnancy, their mean age was 17.8±1.5 years, and mean gestational age was 35.45±3.8 weeks. Table I

Table I: Descriptive statistics of age and gestational age (n=369)

Variables	Mean	SD	Maximum	Minimum
Age	17.8	1.5	20	16
Gestational age	35.45	3.8	34	39

The most common maternal complication was Anemia 56.36% followed by PIH 31.97%.The frequency of other complications was Preeclampsia 18.69%, Eclampsia 22.76%, Preterm Delivery 14.63%, Cesarean section 27.10% and Instrumental Delivery 7.58%. Low Birth Weight was the most common fetal outcome complication to be 31.97%, still born was found to be 2.16%, early neonatal death 2.16 % and NICU admission was 7.58% as shown in Table II

Table II: Maternal complications and Fetal Outcome (n=369)

	Variables	N	%
Maternal complications	Anemia	208	56.36
	PIH	118	31.97
	Preeclampsia	69	18.69
	Eclampsia	84	22.76
	Preterm delivery	54	14.63
	Cesarean section	100	27.10
	Instrumental delivery	28	07.58
Fetal outcome	Still born	08	02.16
	Low birth weight (lbw)	118	31.97
	Early neonatal death	08	02.16
	NICU admission	28	07.58

Stratification of maternal complication and fetal outcome with respect to age and gestational age was done in Table (III & IV)

Table III: Maternal complications and fetal outcome according to patients age (n=369)

		Age groups		p-value
	Variables	16-18	19-20	
Maternal complications	Anemia	90	118	0.001
	PIH	55	63	0.284
	Preeclampsia	39	30	0.631
	Eclampsia	53	31	0.001
	Preterm delivery	38	16	0.002
	Cesarean section	57	43	0.139
	Instrumental delivery	17	11	0.269
Fetal outcome	Still born	05	03	0.362
	Low birth weight (lbw)	78	40	0.001
	Early neonatal death	06	02	0.001
	NICU admission	17	11	0.001

Table IV: Maternal complications and Fetal Outcome according to gestational age (n=369)

		Gestational age		p-value
	Variables	34-36	37-40	
Maternal complications	Anemia	99	109	0.187
	PIH	60	58	0.964
	Preeclampsia	40	29	0.179
	Eclampsia	60	24	0.0001
	Preterm delivery	57	43	0.139
	Cesarean section	17	11	0.269
	Instrumental delivery	03	05	0.567
Fetal outcome	Still born	68	50	0.057
	Low birth weight (lbw)	05	03	0.083
	Early neonatal death	16	12	0.095
	NICU admission	17	11	0.001

Discussion

In our region, teen pregnancy is very common. In this study, mean age of adolescent mothers was 17.8±1.5 years. This is in line with the findings of Paladugu RK et al [8], as the mean age of adolescent mothers was 18.2 years. Abbas AM et al[9] also found mean age of teenage mothers 17.49±0.63 years. On other hand, Alves JG et al[10] reported that 95.2 percent of teenagers were between the ages of 16 and 19. Teenage pregnancy has been linked to living in less affluent regions, where it is more common than within more affluent regions.[11] This is in contrast to our findings, which showed that 57.5% of adolescents lived in cities and 42.5% lived in rural regions. However, Abbas AM et al[9] reported that most of the adolescent mothers belongs to rural areas.

In both underdeveloped and developed nations, the young age of mothers is linked to a raised risk of preterm delivery. Preterm birth was also prevalent in the current research (14.63%). Many researchers concur with this result, claiming that teenage pregnancy is linked to a raised risk of preterm labour. Tufail A etal[12] and Nili F et al[13] suggested a significantly raised prevalence of preterm labour among teenage mothers.

On the other hand in an Indonesian study, Indarti J et al[14] reported that teenagers were found to be statistically more likely than adults to have anaemia during labour, low birth weight, preterm delivery, eclampsia, and CS delivery.

In current study pre-eclampsia was found to be 18.69%. In comparison to nationally and internationally reported statistics, this prevalence is very high. Baker AM estimated 8.9%[15], and Kumar A reported 4.3%[16] risk of pre-eclampsia in adolescents. In this study, PIH was found to be 31.97%, while Paladugu RK et al[8] found PIH 8%.

There is a raised risk of anaemia in young age pregnant teenagers, as reflected in this study, more than half of the patients (67.1%) were anaemic.

Similarly, Paladugu RK et al[8] also reported that only 4% of adolescent mothers had a hemoglobin of >10 gm%, while 96% were anemic followed by 68% adolescent mothers were mildly anemic and 28% were moderately anemic. Our findings were also following most of the studies conducted on the prevalence of anaemia in teenage pregnancy as reported by Deshmukh PR (65.3%)[17], and Chahande, et al. (72.6%).[18] In our community there is a raised prevalence of anaemia among teenagers along with adult females and this raised anemic incidence can be because of multiple factors such as poverty poor diet, improper sanitation, and low level of education regarding iron supplements in the course of pregnancy.

In this study as per neonatal outcome, low birth weight was highly prevalent as 31.97% and still born was found to be 2.16% followed by early neonatal death 2.16 % and NICU admission was 7.58%. These findings were in accordance with the study of Abu-Heija A et al.[19] However on other hand Dwa YP et al[18] also reported that respiratory distress (21.5 %) was the most common cause of low birth weight, accompanied

by neonatal sepsis (13.3%) and perinatal asphyxia (6.7%), 3 (2.2%) with stillbirths, and 2 (1.5 %) with early neonatal deaths.

Conclusion

Pregnancy in adolescence is linked to negative outcomes. To counter this multifaceted issue, we should work to minimize the number of teenage pregnancies, not just to reduce the negative consequences for young mothers, but also to keep family sizes low. Access to high-quality, gender-sensitive, and adolescent-friendly health services must be guaranteed. A National Teenage Pregnancy Prevention Program should be established which should initiate and organize public awareness campaigns, as well as develop recommendations and research associated with the prevention of complications of teenage pregnancy. To alleviate the pressure of socioeconomic and health issues, teen pregnancy must be addressed as a top priority.

References

1. Kassa GM, Arowojolu AO, Odukogbe AA, Yalew AW. Prevalence and determinants of adolescent pregnancy in Africa: a systematic review and meta-analysis. Reproductive health. 2018;15(1):1-7.
2. Papri FS, Khanam Z, Ara S, Panna MB. Adolescent pregnancy: risk factors, outcome and prevention. Chattagram Maa-O-Shishu Hospital Medical College Journal. 2016;15(1):53-6.
3. Mubeen K, Baig M. Adolescent pregnancies: the case of Pakistan. Journal of Asian Midwives (JAM). 2016;3(2):69-78.
4. Shah N, Rohra DK, Shuja S, Liaqat NF, Solangi NA, Kumar K, Kumar K, Ahuja KL, Azam SI, Khan N. Comparison of obstetric outcome among adolescent and nonadolescent mothers from three tertiary care hospitals of Sindh, Pakistan. Journal of Pakistan Medical Association. 2011 ;61(10):963
5. Kingston D, Heaman M, Fell D, Chalmers B. Comparison of Adolescent, Young Adult and Adult Women's Maternity Experiences and Practices. Paediatrics J. 2012;129:1228-37
6. Aruda MM, Waddicor K, Frese L, Cole JC, Burke P. Early pregnancy in adolescents: diagnosis, assessment, options counseling, and referral. J Pediatr Health Care. 2010;24:4-13.
7. Franjić S. Adolescent Pregnancy is a Serious Social Problem. J. Gynecol. Res. Obstet. 2018;4:006-8.
8. Paladugu RK, Donipudi PC, Chimata D, Jasti M. Adolescent pregnancy and its outcomes: a cross-sectional study. Int J Community Med Public Health. 2018;5(10):4408-14.
9. Abbas AM, Ali SS, Ali MK, Fouly H, Altraigey A. The maternal and neonatal outcomes of teenage pregnancy in a tertiary university hospital in Egypt. Proc Obstet Gynecol. 2017;7(3): 1-0.
10. Alves JG, Cisneiros RM, Dutra LP, Pinto RA. Perinatal characteristics among early (10-14 years old) and late (15-19 years old) pregnant adolescents. BMC Res Notes. 2012;5:531.
11. McCulloch A. Teenage childbearing in Great Britain and the spatial concentration of poverty households. Journal of Epidemiology & Community Health. 2001 Jan 1;55(1):16-23.
12. Tufail A, Hashmi HA. Maternal and perinatal outcomes in teenage pregnancy in a community based hospital. Pak J Surg. 2008;24:130-4.
13. Nili F, Rehmati MR, Sharifi SM. Maternal and neonatal outcome in teenage pregnancy in Tehran valiasr hospital. Acta Med Iranica. 2002;40:55-9
14. Indarti J, Al Fattah AN, Dewi Z, Hasani RD, Mahdi FA, Surya R. Teenage Pregnancy: Obstetric and Perinatal Outcome in a Tertiary Centre in Indonesia. Obstetrics and gynecology international. 2020 Mar 26;2020.
15. Baker AM, Haeri S. Estimating risk factors for development of preeclampsia in teen mothers. Arch Gynecol Obstet. 2012;286:1093-6.
16. Kumar A, Singh T, Basu S, Pandey S, Bhargava V. Outcome of teenage pregnancy. Indian J Pediatr. 2007;74:927-31
17. Deshmukh PR, Garg BS, Bharambe MS. Effectiveness of weekly supplementation of iron to control anaemia among adolescent girls of Nashik, Maharashtra, India. J Health Popul Nutr. 2008;26:74-8.
18. Chahande MS, Jhadao AR, Wadhva SK, Ughade S. Study of some epidemiological factors in teenage pregnancy: Hospital-based case-comparison study. Indian J Community Med. 2002;27:3
19. Abu-Heija A, Al Haddabi R, Al Bash M, Al Mabaihsi N, Al-Maqbali NS. Early Teenage Pregnancy: Is it Safe?. The Journal of Obstetrics and Gynecology of India. 2016 Apr 1;66(2):88-92.
20. Dwa YP, Bhandari S, Shrestha D, Dhakal AK. Perinatal outcomes in adolescent pregnancy. Journal of Chitwan Medical College. 2018;8(2):27-31.