PREGNANCIES IN ADOLESCENTS: FETAL, NEONATAL AND MATERNAL OUTCOME

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ABSTRACT

We studied the perintatal morbidity and mortality among adolescent pregnancies in the semi-urban population of Gorakhpur. The number of eligible couples (females 15-44 yrs) were 24,000. Out of 430 adolescent married girls, 242 (56.3%) became pregnant during the study period. Nineteen (7.8%) of adolescent pregnancies were in the maternal age group less than 15 years and 110 (45.5%) and 113 (46.7%) pregnancies were in the age group 15-17 yrs and 17-19 yrs, respectively. The incidence of low birth weight babies was 67.3% of all live births. Infections during neonatal period, congenital anomalies and birth injuries were seen in 21.6, 8.6 and 13.1% newboms, respectively. Neonatal mortality rate was 136.2/1000 live births. Three adolescent mothers died during pregnancy or puerperium due to causes related to pregnancy. The incidence of LBW, neonatal and maternal morbidity and mortality associated with adolescent pregnancies were significantly higher.

Key words: *Low birth weight, Maternal morbidity, Maternal mortality, Adolescent pregnancy.*

Although, adolescent marriage is a cognizable offence(1), these marriages are still common in most of the states in India. Adolescent girls are not physically and mentally developed for marriage and childbirth; these marriages often lead to abortions, still births, low birth weight babies and poor survival of live borns. The maternal mortality in adolescence is also high(2). In order to study the problems related to adolescent pregnancies, we obtained information in 242 cases.

Material and Methods

The present study was carried out in 100 Anganwadi centres in urban slums of Gorakhpur city (covered under ICDS urban project). All the women of reproductive age group under these Anganwadi centres were visited by Pediatricians and Anganwadi workers and the marital status of adolescent girls(10-18 years) were recorded. Age of all these females was ascertained by questioning parents and by looking at birth certificate wherever possible. All the pregnant women below 19 years of age were registered for this study. Detailed information regarding pregnancies and outcome was recorded particularly in adolescent mothers. The pregnant mothers were examined by the Lady Health Visitors (LHV) or the Anganwadi workers and were provided antenatal advise and care on each visit. Five to seven follow-up visits either at home or hospital were made in each case during pregnancy. The deliveries

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were conducted by trained Dais, LHV or doctors. In case of home delivery, birth weight was recorded by the Anganwadi workers within the first week of birth and was verified by doctors during subsequent visits. In hospital deliveries, birth weight was recorded just after birth by Pediatrician. Low birth weight was defined as birth weight of less than 2.5 kg. All newborns and mothers were examined by doctors during first week of birth. The term birth injuries was used to denote avoidable and unavoidable mechanical and anoxic trauma incurred by the infant during labor and delivery, the diagnosis of neonatal sepsis was made in the newborns with systemic illness and the term congenital malformation was used for the morphological defect of an organ, part of an organ or larger region of the body resulting from an intrinsically abnormal developmental process.

Results

In a population of 100,452, there were 24,400 eligible couples and of these married adolescent girls were 315. One hundred gand fifteen girls were married during the study period. Of the 430 adolescent marriages, 242 (56.3%) pregnancies occurred during the period of study. The weights of the pregnant adolescents during the first trimester were less than 40 kg in 136 (56.2%), 40-45 kg in 70 (28.9%) and more than 45 kg in 36 (14.9%); 207 (85.5%) mothers were primigravida, while 35 (14.5%) had the second pregnancy. Anemia (hemoglobin less than 12 g/dl) was observed in 41 (16.9%) mothers.

The outcome of 242 pregnancies is detailed in *Table I.* Incidence of abortions was very high in 13-15 year age group (52.6%) whereas the incidence of live births were maximum in 17-19 year mothers.

Table II shows that of 162 live births, 10 (6.2%) were born after 42 weeks gestation; and 53 (32.7%) were premature. All neonates born to mothers of less than 15 year old were preterm (mean gestational age = 36 weeks).

Of 162 live born babies, 117 (72.2%) were delivered in hospitals and 45 (27.8%) at home. Among the hospital deliveries 52 (44.4%) mothers delivered normally, 47 (40.2%) through cesarean section and 18 (15.4%) by use of forceps. In home deliver-

TABLE I–*Outcome of Adolescent Pregnancies*

Age of pregnancy (yrs)	No. of cases (n=242)	Abortions No. (%)	Live births No. (%)	Still births No. (%)	Maternal deaths No. (%)	Neonatal deaths No. (%)
13-15	19	10 (52.6)	5 (26.3)	4 (21.1)	2 (10.5)	1 (5.26)
15-17	110	14 (12.7)	69 (62.7)	27 (24.6)	1 (0.9)	9 (8.18)
17-19	113	10 (9.1)	88 (77.6)	15 (13.3)	—	12 (10.2)
Total	242	34 (14.1)	162 (66.9)	46 (19.0)	3 (1.2)	22 (9.0)

*Still birth rate = 283/1000 live births.

* Maternal mortality rate = 18/1000 love births.

* Neonatal mortality rate = 136/1000 live births.

TABLE II—*Maternal Age Related with Outcome of the Newborn*

Maternal age (yrs)	No. of live borns	Gestation		Birth weight		Morbidity		
		<37 wks No. (%)	≥37 wks No. (%)	<2.5 kg No. (%)	≥2.5 kg No. (%)	Neonatal sepsis	Cong. anomalis	Birth injury
13-15	5	5 (100)	–	5 (100)	–	1 (20.0)	–	–
15-17	64	18 (28.1)	46 (71.9)	52 (81.2)	12 (18.8)	15 (28.8)	5 (7.8)	8 (12.8)
17-19	93	30 (32.3)	63 (67.7)	52 (56.0)	41 (44.0)	19 (10.4)	9 (9.6)	13 (13.1)
Total	162	53 (32.7)	109 (67.3)	109 (67.3)	53 (32.7)	35 (21.6)	14 (8.6)	21 (13.0)

ies, 13 (28.9%) were normal, 30 (66.6%) mothers developed perineal tear and 6 (13.3%) had post partum hemorrage. One maternal death and 4 cases of puerperal sepsis occurred in hospital deliveries whereas 2 maternal deaths and 10 cases of puerperal sepsis were observed in home deliveries. The number of low birth weight (LBW) babies were 109 (67.3%). All the five births from mothers below 15 year were LBW. Incidence if LBW in the age group 15-17 year and 17-19 year were 81.3 and 55.9% respectively (*Table II*). Neonatal mortality rate was 13.6%; the major causes included neonatal infections, birth injuries and congenital anomalies.

Perineal tear (14.5%), ante partum hemorrhage (9.9%) and hydramnios (8.1%) were the common complications (*Table III*).

Discussion

The United Nations demographic data indicates that in many developing and industrialized countries, births to women under twenty years of age represent a

TABLE III—*Age of Mother and Maternal Morbidity*

Age of mothers (yrs)	No. of mothers	Anemia	Hydram-nios	Antepar-tum hemor-rhage	Toxemia	Perineal tear	Post partum hemorrhage	Puerperal sepsis
<15	19	–	8 (40.1)	2 (10.5)	1 (5.3)	1 (5.3)	–	1 (5.3)
15-17	110	34 (30.9)	4 (3.6)	8 (7.3)	10 (9.3)	5 (4.5)	6 (5.3)	5 (4.5)
17-19	113	7 (6.2)	10 (8.8)	14 (12.4)	11 (9.7)	8 (7.1)	10 (8.8)	8 (7.1)

Figures in parantheses indicates percentages.

growing proportion of all births(3). Lee *et al.* reported that 70% of girls between 15 and 19 years of age are married in India(4). Low rates of female literacy (39.4%) and social customs expose girls to pregnancy during adolescence(5). Demographers have estimated that if marriage was postponed from 16 to 20-21 years, the number of births would decrease by 20-30%(6). Data from 35 countries of Asia, Africa, Latin America show that neonatal mortality rates are consistently higher among infants of young mothers (age less than 20) than among mothers in the third decade(7).

Low birth weight which is the result of premature labor, premature rupture of membrane and intra-uterine growth retardation is a significant problem amongst infants born to teenage mothers. The incidence of low birth weight babies in India ranges between 30-40% and they account for over 80% of neonatal deaths. The overall incidence of low birth weight babies in previous studies was 24-42%(8,9). The incidence of low birth weight babies in teenage mothers in the present study is 67.3%. The very high incidence of low birth weight may be due to high proportion of under nourished and anemic adolescent mothers(10). The incidence of premature labor in the present study in adolescent mothers was 32.7% as compared to other reports ranging from 11-31%(11-13).

Risk of low birth weight and infant mortality are greatest for the children of youngest mothers (≤15 years). Earlier observations also documented an increasing neonatal mortality rate with decreasing maternal age(7,10,13). The neonatal mortality rate in 1982 was 21.81 per thousand live births in the present population in mothers above 20 years of age(14), whereas the neonatal mortality rate is 136/1000 live births in the present study. Maternal mortality rate in India is 3.4/1000 live births(15) whereas in present study it was 12/1000 live births. In previous studies from other centres the morbidity patterns in pregnant mothers above 20 years of age were very low in comparison to the present study(9,16).

The present study, therefore, concludes that there is an increased incidence of neonatal and maternal morbidity and mortality amongst adolescent mothers. This calls for urgent and effective measures to be taken to prevent adolescent marriages, both by Government and voluntary organizations by disseminating population information and ensuring wider participation in family welfare programmes. The primary goal of all such health education programmes should be to educate the masses to increase the age of marriage especially for girls.

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