Profile of neonates born to adolescent mothers at

Nepal Medical College Teaching Hospital

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ABSTRACT

Pregnancy in adolescence is often associated with maternal complications as well as preterm delivery, low birth weight babies and small for date babies. A retrospective study was carried out in 350 adolescent women who delivered child at Nepal Medical College Teaching Hospital (NMCTH), Attarkhel, Kathmandu from April 2005 to February 2009. Data were obtained from the case record register. Prevalence of pregnancy in adolescence was 11.1%. Majority of adolescent mother were aged between 17-19years, belonging to Mongolian ethnicity, Hindu by belief and residing within Kathmandu Valley. More than 90.0% mothers were primigravida and 85.4% had complete antenatal check up (ANC). Normal vaginal delivery was the predominant mode of delivery (84.6%), followed by lower section caesarean section (LSCS) (14.0%) and instrumental delivery (1.1%). In newborn, male outnumbered female (59.7% vs 40.3%). A reasonable number of preterm (10.9%), low birth weight (12.3%), small for gestational age babies (7.4%) and neonates with birth asphyxia (10.3%) were noted. These newborns are often associated with high morbidity and mortality. Therefore, it is imperative to prevent teenage pregnancy by providing adequate access to health facilities and raising awareness about the sex and reproductive health a mongst this population.

Keywords: Adolescent pregnancy, low birth weight, neonates, preterm, small for gestational age.

INTRODUCTION

Adolescence is the period in life when an individual is no longer a child, but not yet an adult. It spans the age of 10 -19 years. The term "adolescere" is a Latin word which means "to grow".[1] In this period of life significant changes occur in structural and functional (biologic, physiologic, psychosocial and sexual) aspects of growth and development, which could lead to risk taking behavior such as substance abuse, unsafe sex resulting early pregnancy.[2]

In developing countries, lack of proper sex and reproductive education, low socioeconomic status and early marriage practices causes adolescent pregnancy. It is estimated that globally about 13 million infant born to adolescents of which more than 90% occur in developing countries, especially in sub- Saharan Africa.[3]

In our subcontinent the rate of adolescent pregnancy is much more in rural area than in urban and industrialized countries (Malaysia, Singapore, South Korea).[4]

Adolescents comprise 24.8% of the Nepalese population. The median age at first marriage for a woman in Nepal is 16.6 years, suggesting that the majority of newly married couples are teenagers. In Nepal 6.9% of 15 – 19 years old girls get married.[5] The combination of poor nutrition and early child bearing expose young women to serious health risks during pregnancy and childbirth, including damage to the reproductive tract, pregnancy related complications, such as anaemia, pregnancy induced hypertension, preterm labour, cephalopelvic disproportion, maternal mortality, perinatal and neonatal mortality, and low birthweight.[6,7] There is higher number of premature and low birth weight (LBW) in this group[8] and this incidence was noted even in developed countries.[9-11]

Hence this study was conducted to know the prevalence of adolescent pregnancy and the immediate birth status of newborns delivered by these mothers at Nepal Medical College Teaching Hospital (NMCTH).

MATERIALS AND METHODS

A hospital based a retrospective study was conducted in NMCTH, Attarkhel, Kathmandu. All adolescent mothers who delivered child at this hospital from April 2005 to March 2009 were included in the study. Mothers with any chronic illness, congenital diseases, birth before 28 weeks, weight less than 500gms and home delivery cases were excluded from the study. Data were collected from the case record register from archive and analyzed.

RESULTS

During the period of study total numbers of delivery were found be 3144 out of which 365 deliveries were by of

Table-1: Demographic representation of the adolescent mother

Age (year)	**n.(%)**
10- 13	0 (0.0%)
14- 16	9 (2.6%)
17 –19	341 (97.4%)
Residence	
Inside Valley	331 (94.5%)
Outside valley	19 (5.5%)
Religion	
Hindu	281 (80.3%)
Buddhist	62 (17.7%)
Christian	0 (0.0%)
Muslim	7 (2.0%)
Others	0 (0.0%)
Ethnicity	
Brahmin	67 (19.1%)
Chhetri	19 (5.4%)
Newar	30 (8.6%)
Mangolian	183 (52.3%)
Others	51 (14.6%)

Table-2: Antenatal visit by adolescent mother

Antenatal check up	**n.(%)**
Yes	299 (85.4%)
No	51(14.6%)

Table-3: Gravida of adolescent mother

Gravida	**n.(%)**
Primi	326 (93.1%)
Multi	24 (6.9%)

adolescent mothers in which 15 were home delivery cases which were excluded from the study. So the remaining 350 (11.1%) cases constituted the actual adolescent pregnant mothers who had delivered at the hospital.

Demographically majority of the mothers (97.4%, n=341) were aged between 17-19 years (Table-1). Most of them (94% n=331) were from within Kathmandu valley (Table-1). Hindu was found to be most common (80.3%, n=281) religion followed by Buddhist (17.7%, n=62) (Table-1). By ethnicity Mongolians (Tamang, Lama, Sherpa, Gurung, Rai) were found to be a predominant (52%, n=183) ethnical group followed by *Brahmins* (19.1%, n=67) (Table-1).

Majority of mothers 326(93.1%) were primi gavida (Table-2), who 299(85.4%) had antenatal check up (Table-3). Mode of delivery was predominantly spontaneous vaginal delivery which constituted 296(84.5%), followed by lower segment caeserean section (LSCS) 49(14.0%) and instrumental delivery (vaccum/forcefs) 5(1.4%) (Table-4).

Almost all 346 (98.9%) deliveries were singleton besides 4(1.1%) sets of twin. Male babies were 209(59.7%) where as female were 141(40.3%) (Table-4). Still birth was noted less than 1.0% (Table-4). Majority of newborns 300(85.7%) were term babies which was followed preterm 38(10.9%) and post term 12(3.4%) (Fig.1). Low birth weight (LBW) babies were 41(12.3%) and very low birth weight (VLBW) was less than 1.0% and no extreme low birth weight (ELBW) babies were noted (Table-4). Small for gestational age (SGA) was 26(7.4%) and large for gestational age was (LGA) 4(1.1%) (Fig.2). Only 5(1.4%) had congenital anomaly which were all minor one. Birth asphyxia in total it was noted 36(10.3%), and by severity mild, moderate and severe were 22(6.35%), 11(3.1%) and 3(0.9%)

Table-4: Neonatal profile of adolescent mother

Variable	**n. (%)**
Sex	
male	209 (59.7%)
Female	141 (40.3%)
Birth Status	
Live	347 (99.1%)
Still	3 (0.9%)
Term	300 (85.7%)
Preterm	38 (10.9%)
Post term	12 (3.4%)
LBW	41 (12.3%)
VLBW	2 (0.6%)
ELBW	0 (0.0%)
AGA	320 (91.4%)
SGA	26 (7.4%)
LGA	4 (1.1%)
Single	246 (98.9%)
Twin	4 (1.1%)
Birth asphyxia	
Mild	22 (6.3%)
moderate	11 (3.1%)
severe	3 (0.9%)
Total	36 (10.3%)
Mean Apgar Score	
1 minute	7.59 ± 1.17
5 minute	8.75 ± o.96
Congenital anomaly	
major	0 (0.0%)
minor	5 (1.4%)
Mode of delivery	
SVD	296 (84.4%)
Instrumental	5(1.1%)
Vaccum	1 (0.1%)
Forceps	4 (1.1%)
LSCS	49 (14.0%)
Emergency	49 (14.0%)
Elective	0 (0.0%)

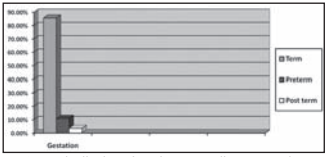

Fig.1: Distribution of newborn according to gestation.

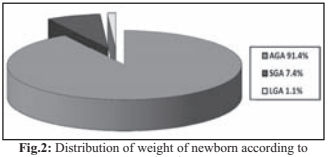

Fig.2: Distribution of weight of newborn according to gestational age

respectively (Table-4). The mean APGAR score was found to be 7.57±1.17 and 8.75±0.986 in first one and five minutes respectively (Table-4).

DISCUSSION

Teenage pregnancy has been found to be a social dilemma regarding the neonatal outcome and morbidity and mortality1. Prevalence of adolescent pregnancy was 11.1% in our study where as Kayastha *et al*[12] had reported incidence of 9.7%. Most of the pregnant mother were aged 17- 19 year and similar findings were noted in the western countries and other studies.[2,3] This could be because of the peak changes in psychosexual and behavioral profile that occur during this late adolescent period. Most of these mothers were from within valley and predominantly belonging to Mangolian ethnicity with Hindu religion by belief. This could be because of most of them are residing in the vicinity of the hospital and the area is being densely populated by the Mongolian (*tamang, lama, Sherpa*) population and Nepal is a Hindu predominant country.[5]

Mothers were 93.1% primi gravid and similar findings were noted by Yadav et al.[13] More than 85.0% had complete antenatal check up (ANC) visit which agrees with previous study done at NMCTH by Tuladhar et al[14] and this may be because of most of them were form vicinity of the hospital.

Normal vaginal delivery, instrumental delivery and lower segment caesarean section (LSCS) constituted 84.6%, 1.2% and 14.0% respectively. Yadav *et al*,[13] *Ruth et al*[15] and Hoque *et al*[16] found similar comparable results. This could be due to a higher incidence of low birth weight and premature baby in teenage pregnancies as this would be associated with a higher chance of successful vaginal delivery.[17]Another possibilities could be a good ANC visit. Male baby out numbered female (59.7% vs 40.3%). Less than 1.0% constituted still birth Yadav *et al*,[13] Gordon *et al*[18] and Hoque *et al*[16] aslo reported (2.4%, 0.9% and 2.2%) respectively.

A reasonable numbers of premature (10.9%), LBW (12.3%) and SGA (7.4%) babies were found in our study and many previous studies have shown similar findings.[13,16,19,20] This study shows that teenage pregnancy is associated with preterm delivery and low birth weight and small for gestational age babies. Also the high proportion of small for gestational age babies seen in both teenage and non-teenage age groups may be due to the use of Babson and Benda growth chart which is based on a different population.[21] It is often argued that the adverse reproductive outcome in teenage pregnancy is due to the social, economic and behavioral factors rather the biological effect of young age alone.[22,23]

Birth asphyxia (mild,moderate and severe) was noted to be 10.3%, where Sharma *et al*[24] and Bertagnon *et al*[25] reported 2%, 6.4% respectively. The contrast in this figures may be due to reporting only severe cases in their previous studies. Mean Apgar Score (7.57±1.17 and 8.75±0.986) was comparable with Hoque *et al*.[14] A very small numbers (0.9%) of congenital anomalies (all minor) were seen which was similar to the findings (0.9%) reported by Mukhopadhyay *et al*[26] in India.

So, in our study majority of the mothers were in late adolescents ie aged between 17-19 years, residing within Kathmandu valley. Ethnically most of them were Mongolian and Hindu by belief. Majority of them were primi gavida, who had good numbers of antenatal check up. Normal vaginal delivery was the predominant mode of delivery. Where as a proportion of preterm, LBW, SGA, and birth asphyxia found in this study seem to be a concerning issue in adolescent pregnant mothers. Therefore to minimize or prevent teenage pregnancy and its adverse consequences, it is imperative to raise the awareness about adolescent sex and reproductive health care educations and make them maximum accessible to the heath care facilities from local level to higher government sectors.

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