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Original Research Article

Vaginal deliveries in a tertiary centre: a current profile

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ABSTRACT

Background: A normal delivery is what every woman wishes to have. The objective of this study was to find out the maternal and neonatal outcome and background characteristics of women delivering vaginally in a tertiary care center in Chennai, South India.

Methods: For this one-year study, with power above 80%, Parturition records were selected by computerized random numbers, for a calculated sample size. Salient demographic features such as age, residential background and religion were noted. Details of obstetric history, past and current, delivery and baby details and admission to NICU were analyzed. Acceptance of postpartum contraception was noted.

Results: A total of 338 women delivered vaginally. Majority of 63%, were from urban background. Late referrals were 19.2% of women, 38.5% women had antenatal complications. Primigravida were 49.7%. Nearly 91.4% of women delivered naturally. Previous pregnancy loss was noted in 14.8%. Term deliveries were in 72% of women, and 2.7% of women delivered twins. Average birth weight among primi was 2.5kg and in multi it was 2.8 kg. There were no maternal deaths. Perinatal deaths of 2.96%, of which 90% were preterm births, and all among babies with birth weight below 1.5 kg.

Conclusions: The larger majority of 91.4% of women had natural vaginal delivery. Primigravida were 49.7%, and 63% were from urban background. Antenatal complications, obstetric, medical or other complications were noted in 38.5 % of women. Most often observed complications were Gestational hypertension, Gestational diabetes, and Hypothyroidism. NICU care was required for 18% of babies. Preterm births were 16.6%. Perinatal deaths were seen in 2.96% of babies. There were no maternal deaths.

Keywords: Antenatal complications, Neonatal outcome, Preterm births, Vaginal delivery

INTRODUCTION

A normal delivery is what every woman wishes to have. The hospital stay, is for a shorter period and the mother is also ambulant and, in a few days after delivery, she is able to carry on some duties of her household which is more acceptable for her and her family. The spouse does not have to stay away from work and lose his daily wages

especially in lower socio-economic groups which form the major part of our population. The shorter hospital stay, also poses lesser cost for both the family and the government. The pain and the minimal trauma to the birth passage of the women, in natural delivery is transient and heals quickly. More important is the long-term effects seen in the family which is of greater concern which is stated by sociologists. Increasing caesarean section rates

are a matter of concern in many countries - 17.2% in India, 34% in Tamil Nadu (NFHS-4, 2015-16). Caesarean section rates higher than 10% are not associated with reductions in maternal and new-born mortality rates. Every effort should be taken to provide intrapartum support to the birthing woman, for a positive birthing experience.¹ The WHO 2018, human reproduction program, mentions that many women have fear and anxiety during labor which precipitates complications. Though every effort should be made to provide caesarean section to a woman in need, rather than striving to achieve a specific rate, studies state that women are three times more likely to die during Caesarean delivery than a vaginal birth, and what remains true is that once a woman has had her first C-section, she is more likely to have a C-section in her future deliveries.^{2,3} It is essential that health care providers provide continuous support to the mother during childbirth to enable her to have a natural delivery.⁴ Tertiary referral centers have obstetric admissions with numerous obstetric and medical complications.⁵ We sought to find out the outcome of mother and baby and background features among women delivering vaginally, in a referral centre where more women with complications are admitted for safe confinement. Objective of this study was to find out the maternal and neonatal outcome and background characteristics of women delivering vaginally in a tertiary care center in Chennai, South India.

METHODS

Tertiary referral center in Chennai, Tamil Nadu, India. This is a retrospective analytical study. This analytical study was conducted using data from the 2017 parturition data from registers. The sample size was calculated for a study power of 80%, within confidence interval limit of 95. Approval for conducting this study was given by the institutional ethics committee. Consent was not obtained from individual study participants as data was accessed from Medical records section only and was analyzed maintaining complete patient confidentiality. Tertiary referral centers have admissions with numerous obstetric and medical complications. Majority of women are referred quite often late. We analyzed the parturition

data of women delivering by vaginal route, to find out maternal and perinatal outcome. Selection of case records: The data from case sheets of pregnant women admitted for obstetric care in, our tertiary care centre were scrutinized. The study period was the calendar year 2017, starting from January 1st and ending on 31st of December 2017. The sample size was calculated for a power of 80%, and within a 95% limit confidence interval. Statistical analysis was done by using SPSS software. Parturition records were accessed by selection of case records for the sample size. To establish an appropriate selection, the dates of delivery of women, whose case records were selected for inclusion in the study, were the first and second dates of each month, of all twelve months of the year. This was to reduce statistical errors and for obtaining relevant values for the tests of significance. The inclusion criteria were selection of all parturition records, of women, where delivery was conducted by vaginal route, on the selected dates. Natural vaginal delivery with and without episiotomy. Vaginal delivery by forceps, of outlet, low mid cavity, and vacuum assisted, deliveries. Assisted breech deliveries delivered vaginally were included. The parturition records, of all other mode of deliveries, conducted, on the same days were excluded.

Demographic features, obstetric history, gestational age and antenatal complications were recorded. Maternal outcome and baby details including sex of the baby, birth weight, APGAR and admission to new born intensive care unit (NICU) were analyzed. The acceptance of postpartum contraception by the birthing women was noted.

RESULTS

In the study group, 338 women delivered vaginally. The majority of women belonged to the age group of 20-25 years, (58%) and a large number of 212 women forming 63% of the study group were from an urban background. 65 women were referred late to the center. Many of the women 78.1% (n = 264) delivered at term (Figure 1).

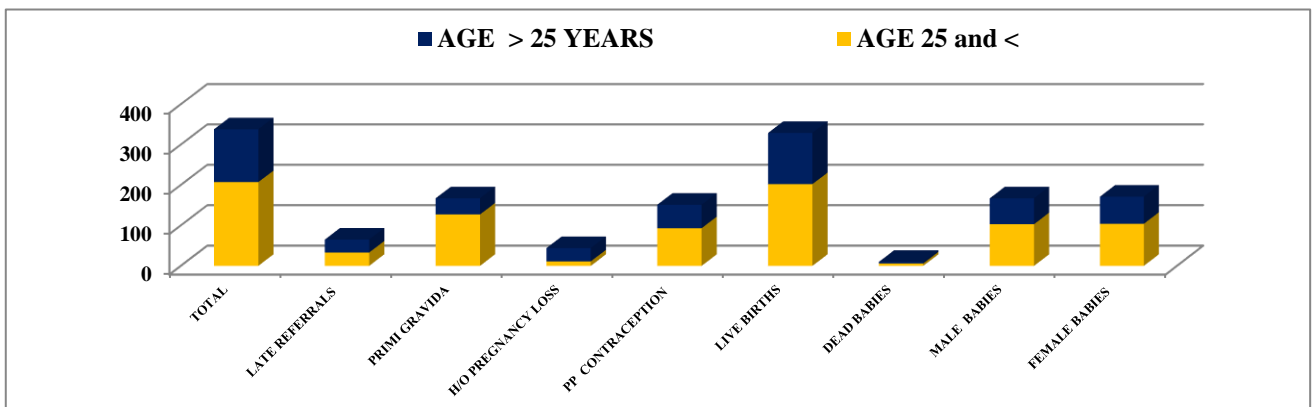


Figure 1: Vaginal births - maternal background and neonatal outcome.

The majority of 58% women belonged to the age group of 20-25 years, and a large number of 63% of the study group of women were from an urban background. Late referrals were 19.2% of women. PP Contraception accepted by 44.6% of women.

Twenty-two women required assistance for delivery with forceps or vacuum extraction and three were delivered as breech extraction. 8.6% deliveries were labor natural with episiotomy, 5.9% forceps, 0.8% breech extraction and 0.7% vacuum delivery. The larger majority of 91.4% of women (n = 309) who had vaginal deliveries had a natural delivery and only a small number of 29 of these women required episiotomy. The gestational age (GA) of 75.4% of babies at birth was 34 weeks or above.

Multi gravid women formed a marginally larger majority of (n = 172 women) 50.9% of the study group women. Of these, a small number of 1.2% (n = 4) of the study group were grand multitis.

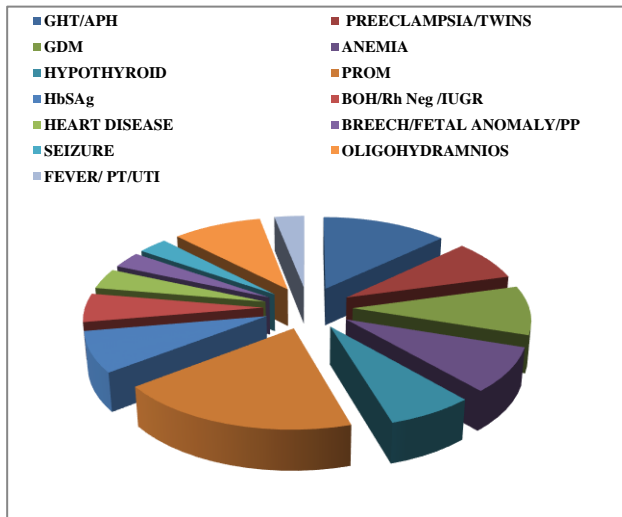


Figure 2: Antenatal complications in women.

Antenatal complications, medical obstetric and fetal complications were present in 38.5% of women, in the study group. Most often seen complications were gestational hypertension, and preeclampsia gestational diabetes, anemia and hypothyroidism.

Nearly 38.5% (n = 130) of the total group of women in the study had antenatal complications, medical or obstetric including fetal complications (Figure 2). The most often observed complications were Gestational hypertension, Gestational diabetes, and hypothyroidism. Nearly 3% of antenatal complications and forming 8% of the total study group of women were positive for HBsAg.

Pregnancy complications of premature rupture of membranes constituted a significant 19.2% of antenatal complications and observed in 7.4% of the study group of women who had vaginal delivery. The second commonly noted obstetric complication was multiple pregnancy of

twin pregnancy and recorded in 6.2% of the antenatal complications and occurred in 2.1% of the study group of vaginal deliveries. Pregnancy loss in the past obstetric history was noted in 14.8% of (n = 49) women. The two genders were almost equal in number, but there were more perinatal deaths among male babies. There were twice the number of low birth weight babies in the younger age group of women. The birth weight range for Term babies was 0.96 to 4.5 kg. Preterm babies constituted 16.6% (n = 55) of the total number of babies in the study group. A smaller number of 44% of preterm babies were females and male babies formed 56% of the preterm group (Figure 3, Figure 4). There were no maternal deaths in the study group of women.

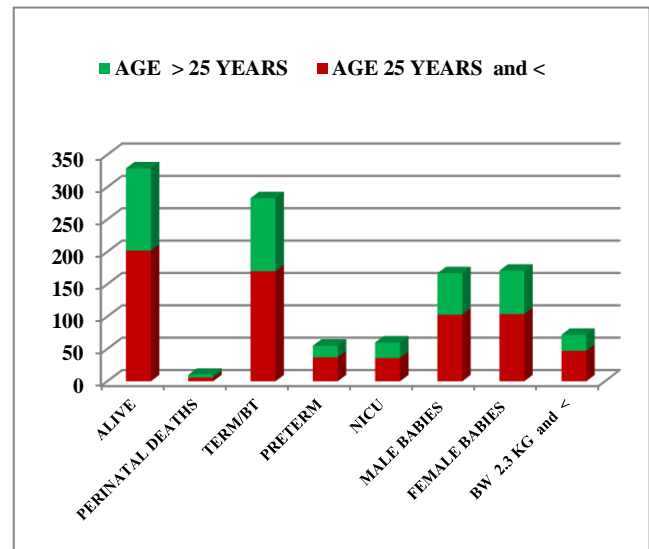


Figure 3: Vaginal births - neonatal outcome.

Nearly 97.3% of babies were born alive. 83.7% babies were term/ near term. Male and female babies were almost equal in number. NICU admission was required for 17.8% of babies. For comparison of neonatal outcome, we divided the total study population of mothers who delivered vaginally into two groups. Group I, with 207 women aged 25 years and below. Group II, with 131 women, aged 26 years and above. There were 202 live births and five babies were dead born and one baby died after birth. The two genders were almost equal in number. Male babies were 102 in number and Female babies numbered 103. As based on neonatologist's opinion, of survival of babies based on gestational age at birth we sought to group babies as term or borderline term if the baby was born after completing 34 weeks of gestation. A large number of 170 babies were born at term or near term. A smaller number of 37 babies were born preterm, before completing 34 weeks of gestation. A significant number of 47 babies had a birth weight of less than 2.3 kg. NICU admission was necessary for 36 babies. The graph shows the curve of distribution of birth weight of term and preterm babies. The birth weight range for Term babies was 0.96 to 4.5 kg and Preterm babies the birth weight range was 0.56 to 3.2 kg.

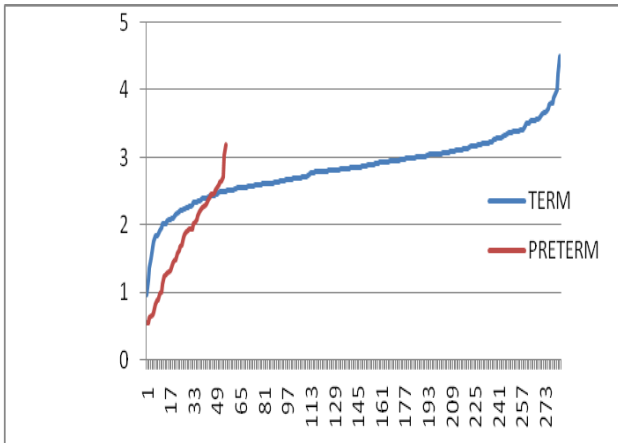


Figure 4: Birth weight of term and preterm babies.

Perinatal mortality

There were ten perinatal deaths. Nine were dead born and one baby died soon after birth. The age of mothers ranged from 21 to 39 years. The birth weight of all the babies was below 1.5 kg and the range of birth weight was from 0.63 to 1.49 kg. The causes of perinatal deaths were associated antenatal medical or obstetric complications (Figure 5, Figure 6) in the mother or fetal anomalies. All ten Perinatal deaths were recorded in babies born to women with ante natal complications. Majority of mothers were primis. Nearly 70% of mothers hailed from urban areas, and half the number of perinatal deaths were in babies with birth-weight one kg and less. Male babies formed 70% and 90% of babies were born preterm (Figure 5, Figure 6).

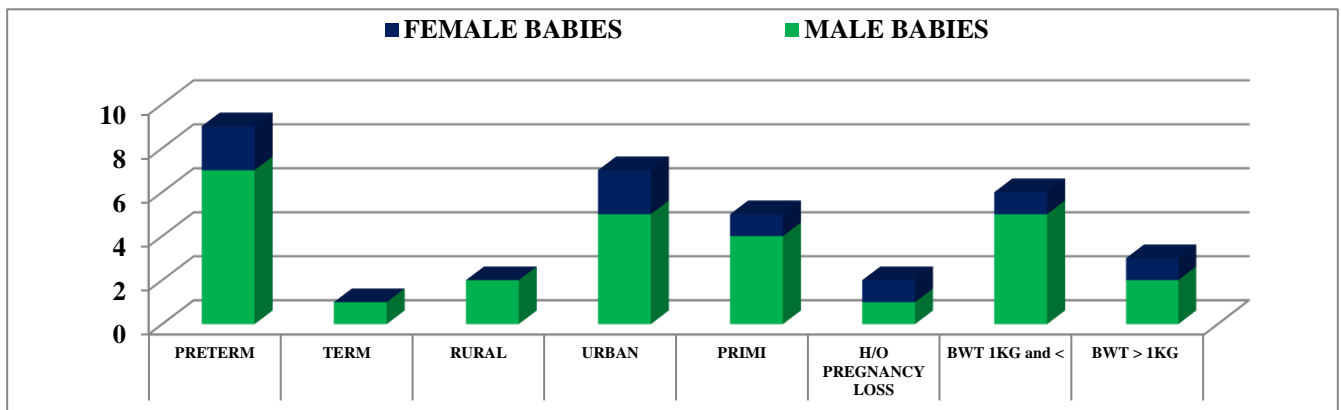


Figure 5: Perinatal mortality.

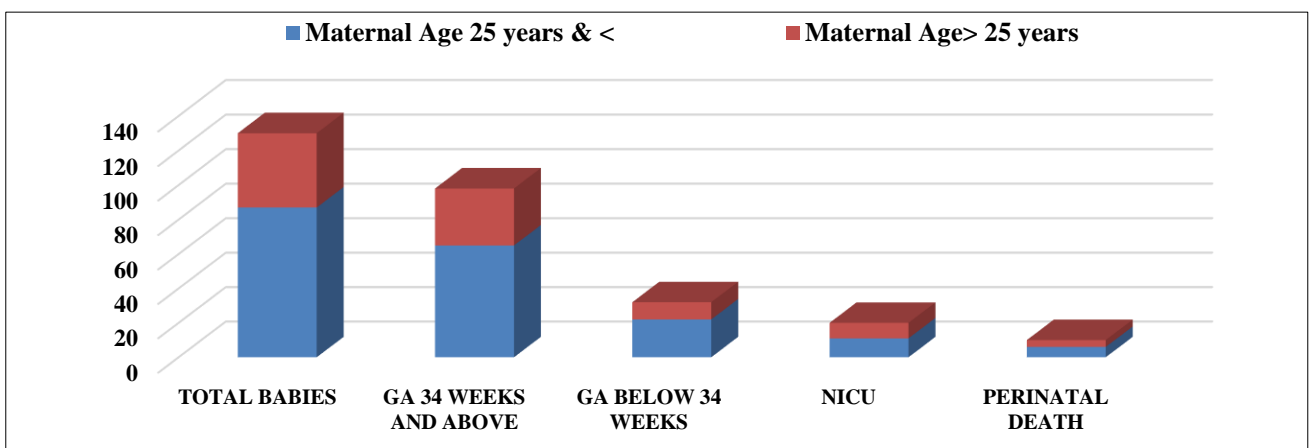


Figure 6: Neonatal outcome in women with ante natal complications.

Nearly 70% of mothers hailed from urban areas, and half the number of perinatal deaths were in babies with birth-weight one kg and less. Male babies formed 70% and 90% of babies were born preterm. The age of mothers was between 21 years to 39 years. Birth weight range was from 0.63 to 1.49 kg. The principal antenatal complications encountered in mothers of still born babies

were Multiple pregnancy with prematurity, severe IUGR, fetal anomalies and anemia. Perinatal mortality was more among male babies.

Antenatal complications, obstetric, medical or other complications were noted in 38.5% of the study group. The majority of 67% of women with AN complication

were aged 25 years or below. The GA of 75.4% of babies at birth was 34 weeks or above (Term/Borderline Term). Twenty babies born to women in the group of women with antenatal complications, forming 18.5% of the total no. of babies born, required NICU admission. All ten Perinatal deaths were recorded in babies born to women in this group, of women with antenatal complications.

DISCUSSION

The age group of women who delivered by the vaginal route, ranged from 16 years to 40 years. Teenage pregnancy was recorded in 3.6% of women.⁶ The majority of women who delivered vaginally belonged to the age group of 20-25 years, 6 and 63% of the study group were from an urban background. Nearly 19.2% of women were referred late to the hospital for delivery. Among the babies born, the two genders, of males and females were almost equal in number. The number of preterm babies born to younger group of women was twice that of the number born to older women (n = 18) aged above 25 years.

Antenatal (AN) complications were present in 38.5% of women in the study group.⁷ Twenty-two women required assistance for delivery with forceps or by vacuum extraction.⁸ Nearly 49.7% of women were primigravid.⁹ A significant number of women forming 2.1% of the total group had complicating hypothyroidism.¹⁰⁻¹² HBsAg test was positive in a significant number of 8% of the study group of women.^{13,14} A significant number of women forming 1.8% of the total group, who were positive for HBsAg, had an additional complication of gestational diabetes.

There were four women with a past history of single pregnancy loss, and among this group of women three women delivered preterm babies. Nearly 15 primiparous women gave a past history of pregnancy loss. Nearly 2.1% (n = 7) of the total group of women who delivered vaginally (n = 7) gave a past history of two or more [higher order] abortions. It was significant to note that all seven women in this group, delivered alive and healthy babies, only one baby was border line preterm, and all had at birth APGAR scores of 8 and above, and also important to note that none of the babies born to women in this group, required admission in NICU. It was a noticeable feature that the birth weight of babies born to this group of women was in the range from 2.4 to 3.3 kg.

Twenty babies born to women in this group of women with antenatal complications required NICU admission. All ten perinatal deaths, were recorded in babies born to women in this group. A significant number of 25 babies weighed less than 2.3 kg. NICU admission was necessary for 24 babies 15,16. The survival rate of babies was good because 84% of babies were born after completing at least 34 weeks of gestation.^{15,16} Though the total number of babies included male and female babies almost equal in number there were more perinatal deaths among male

babies.¹⁵⁻¹⁷ A large group of 67% of women with AN complications was in the age group of 25 years or below.^{18,19}

The majority and forming 70.4% of the total number of babies born in the study group were AGA babies weighing 2500 gm to 3500 gm, and a very small number were LGA babies.^{20,21} A smaller number of 44% of preterm babies were females and male babies formed 56% of the preterm group.²²

CONCLUSION

Multi gravid women, formed a marginal majority of 50.3% of the study group women. The age group of women ranged from 16 years to 40 years. Majority of 58% of women were younger and aged 25 years or below, and a large number forming 63% of the study group were from an urban background. Term (including near term) deliveries was noted in 78.1% of the women, though 18.3% of women were referred late to the hospital for delivery. The birth weight range for Term babies was 0.96 to 4.5 kg and for Preterm babies, it was 0.56 to 3.2 kg. Admission and care in NICU were necessary for 17.8% of the total group of babies born. Preterm babies formed 16.3% of the total number of babies in the study group. Perinatal mortality rate was 2.96% and all were among babies with a, birth weight below 1.5 kg, and 90% of still births were preterm. There were more perinatal deaths among male babies.

The maternal outcome showed that the larger majority of 91.4% of women who had vaginal deliveries had natural delivery though nearly 38.5% of women had antenatal complications, of gestational hypertension, and preeclampsia, gestational diabetes, Anemia and hypothyroidism, and good outcome in mother and baby was seen in 14.8% of women with a past history of pregnancy loss. The study results showed that despite antenatal complications, good outcome in mother and baby was evident in vaginal delivery. It is essential that every possible effort should be made by health care providers at all levels, to lend active support and encouragement for the birthing woman to realize safe vaginal delivery.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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