Original Research Article

# Outcome of pregnancy in elderly nulliparous women: A comparative study

Reena D'souza[1], Smitha B Rao[2*], Anamika Singh[3]

[1]Assistant Professor, [2]Associate Professor, [3]Resident, Department of Obstetrics and Gynaecology, Yenepoya Medical College, Mangalore, Karnataka, INDIA.

**Email:** anamikasingh.3108@gmail.com

## Abstract

**Aim:** The study was conducted to determine the pregnancy and new born outcomes in nulliparous women at age 30 and above. Methodology: It is a prospective longitudinal study conducted in the department of OBG in Yennopya Medical College, Mangalore. Elderly nulliparous women aged 30 years and above (study group) in labour were compared with another group younger nulliparous women below 30 years (control group) in labour. Intrapartum data collected were mode of delivery, incidence of meconium staining and fetal outcome. Chi square test was used for comparison of data. P=0.05 was considered statistically significant. **Results:** The rate of spontaneous vaginal delivery was 58% and casesarean section was 42% among the study group and 72% and 28% in control group. The gestational age of the newborn showed that 75% of the babies were term and 25% of babies were preterm in study group, compared to 92% term babies and 8% preterm in control group. This difference was statistically significant **Conclusion:** Older pregnant women should be encouraged for early, regular antenatal checkup and also advised to deliver in a well equipped hospital, with competent obstetrician, neonatologists and anaesthesiologist.

**Key Words:** Nulliparous women, casesarean section, preterm.

***Address for Correspondence:**

Dr. Smitha B Rao, Associate Professor, Department of Obstetrics and Gynaecology, Yenepoya Medical College, Mangalore, Karnataka.

**Email:** anamikasingh.3108@gmail.com

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## INTRODUCTION

In the present day, women have changed their life style such as in the pursuit of higher education and entry into work forces and career advancement outside the home. This has led to postponement of child bearing, resulting in an increasing maternal age and increase in the rate of divorce followed by remarriage etc. contributes to this upward trend[1]. Large number of women opt to delay pregnancy to achieve higher educational and economic status. Easy access to the wide range of modern contraceptives has helped them for better control of fertility[2]. Pregnancy and child birth are normal physiological processes and outcomes of most of the pregnancies are good. Data suggest that around 40% of all women develop some complication. One such risk factor is elderly pregnancy that leads to many complications during pregnancy, labor and also for the baby[3]. The chance of caesarean section is also found to be more in elderly nulliparous women[4]. In July 1958, the council of International federation of obstetrics and Gynaecology (FIGO) recommended that maternal age of 35 years should be accepted as the International standard for elderly primigravida[5]. The incidence of chromosomal abnormalities, spontaneous abortions, perinatal morbidity and mortality and other obstetric complications are increased[6,7]. In our study, delivery characteristics and newborn outcomes in elderly nulliparous women were compared with the characteristics with younger nulliparous women.

## MATERIALS AND METHODS

This was a study of singleton pregnancy conducted at Yeneopya Medical College, Mangalore over a period of 19 months. Elderly nulliparous women aged 30 years and above (study group) in labour were compared with another group of younger nulliparous women aged below 30 years (control group) in labour. Data regarding mode of delivery- vaginal or caesarean, elective or emergency, incidence of meconium staining, new born characteristics i.e. APGAR SCORE at 1' and 5', gestational age, whether baby was small, large or appropriate for

gestational age, preterm and term, birth weight, congenital anomalies, requirement of neonatal intensive care unit (NICU ) admission were recorded. Neonatal morbidity was recorded as duration of stay in NICU. Congenital anomalies were recorded if a structural or functional abnormality of the baby was present, even those not necessarily affecting the quality of life. Small for gestational age(SGA) was defined as less than 10$^{th}$ percentile for that gestational age, according to the tables of Brenner *et al*[8]. Large for gestational age (LGA) was defined as birth weight more than the 90$^{th}$ percentile for that gestational age. Perinatal death was defined as a still birth at or after 28 weeks of gestation or a neonatal death till 7 days after birth. Data was entered into a data base, d base 3 plus, checked for entry and then analysed with a statistics package, SPSS/PC. Student t test for independent samples was used for birth weight and X2 for nominal data. Logistic regression was used for multivariate comparisons with the forward stepwise method. P=0.05 was considered statistically significant. Odds ratio (ORS) with 95% confidence intervals (CI), used to measure strengths of associations, were computed from logistic in are multivariate analyses.

## RESULTS

The study was conducted at Yeneopya Medical College, Mangalore 100 consecutive cases of study group and 100 consecutive cases of control group were included in the study. The age group of the patients percentage wise (graph1 and graph 2). The oldest woman was 41 years old.

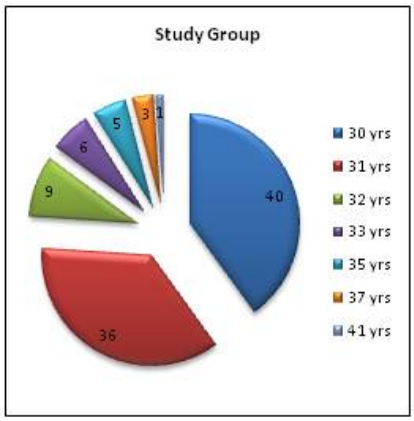


Figure 1

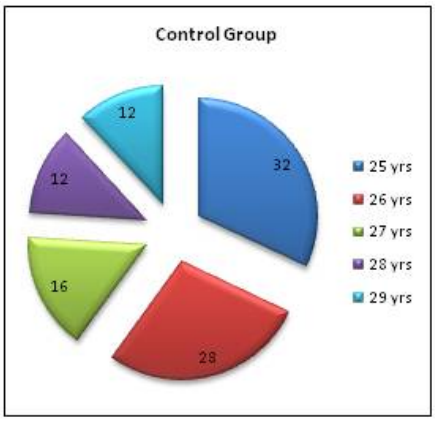


Figure 2

**Table 1:** Detailed Description of vaginal Deliveries

| | Study group | | Controls | | |
|---|---|---|---|---|---|
| | No. of patients | % | No. of patients | % | `p' values |
| Total number of vaginal deliveries | 58 | 58% | 72 | 72% | 0.054 |
| Spontaneous | 39 | 39% | 50 | 50% | 0.195 |
| Vaccum | 11 | 11% | 8 | 8% | 0.629 |
| Forceps | 8 | 8% | 6 | 6% | 0.782 |

Incidence of meconium stained liquor in study group was 8% and in control group was 5%.

**Table 2**: Distribution of Apgar Score in vaginal deliveries in study and Control

| Apgar Score (1 Minute ) | Study Group | Control Group |
|---|---|---|
| < 7 | 6 | 3 |
| ≥ 7 | 52 | 69 |
| APGAR Score (5 minutes) | | |
| < 7 | 4 | 2 |
| ≥ 7 | 54 | 70 |

**Table 3:** Detailed Description of Casearean sections

| | Study group | | Controls | | |
|---|---|---|---|---|---|
| | No.of patients | % | No. of patients | % | `p' values |
| Total numbers of Caesarean sections | 42 | 42% | 28 | 28% | |
| Elective | 8 | 8% | 3 | 3% | .219 |
| Emergency | 34 | 34% | 25 | 25% | |

Incidence of meconium stained liquor in study group was 4% and in control group was 3%.

**Table 4**: Distribution of Apgar Score in caesarean section in study and Control

| Apgar Score (1 Minute | Study Group | Control Group |
|---|---|---|
| < 7 | 4 | 2 |
| ≥ 7 | 38 | 26 |
| APGAR Score (5 minutes) | | |
| < 7 | 2 | 2 |
| ≥ 7 | 40 | 24 |

**Table 5:** New Born characteristics in study group and control

| Details of vaginal deliveries | Study group | | Control | | |
|---|---|---|---|---|---|
| | No. of patients | % | No. of patients | % | `p' values |
| Gestational age | | | | | |
| Term | 75 | 75% | 92 | 92% | 0.003 |
| Preterm | 24 | 24% | 8 | 8% | 0.004 |
| SGA | 1 | 1% | - | - | |
| LGA | - | - | - | - | - |
| Low Birth weight (LBW) | 27 | 27% | 23 | 23% | |
| Birth Weight | 2.74± | 0.52 Kg | 2.95± | 0.65Kg | |
| Congenital anomalies | 2 | 2% | 1 | 1% | |
| NICU admission | 9 | 9% | 7 | 7% | |
| No.of days stay in NICU | 3-6 | | 2 – 4 | | |
| Perinatal death | - | - | - | - | |

## DISCUSSION

The pregnancy complications and adverse outcome are higher in the elderly women. This study assessed many different potential complications in study group compared to the control group. The study also revealed the incidence of primigravida> 30 years in our hospital to be 4.4. The result obtained from the study is comparable with the reports of Diddly *et al* 6.3%[9] and Grimes and Gross the prevalence. of 3.6%[10]. Majority of the study group (40%) were 30 years at delivery and the oldest patient (1%) was 41 year old. On evaluation of reasons for advanced age at delivery showed that late marriage 23% and involuntary infertility 21%. Late marriage was followed by infertility in later life in 5 patients. Late marriage in our society may be due to various social, economic or other unidentified reasons. The present study is comparable to that of other studies done by Bianco *et al* 20.3% [11], and Piepert and Bracken29.7%[12]. The rate of spontaneous vaginal delivery was 58% and casesarean section was 42% among the study group and 72% and 28% in control group which was comparabale to study by mukharjee and chowdhury [13] and Bianco *et al* [11]The caesarean section rate was found to be higher in the study group (72%) when compared to the control group 25% by Sajeethakumari R *et al*[14] 5' APGAR Score is taken as a better indication of long term neonatal outcome. APGAR score ≥ 7 is considered as favourable, noted in 54% of cases and 70% of controls, which was comparable. Authors like Bianco *et al*[11], Berkowitz *et al* [15], Edge and Laros [16]and Grimes and Gross [17] found no differences in 5' APGAR Scores between study group and controls. The gestational age of the newborn showed that 75% of the babies in study group were term, compared to 92% term babies in control group. This difference was statistically significant. 25% of babies in study group were preterm. This differences in the rates of preterm deliveries among older and younger women is significant when the rates of pre term deliveries are compared with various studies. The rates of SGA babies in study group and control women 1% and nil respectively and there were no LGA babies. Though other authors like Prysak *et al* [18] and Cnattingius *et al* [19] have found increased incidence of SGA babies in older mothers, the present results are comparable to Bianco *et al*[11] and Berkowitz *et al*[15] who did not find any such risk of SGA babies. The mean birth weight of babies born to older women was 2.74 +/- 0.52kg compared to 2.95 +/- 0.68kg in babies of younger women. The difference in birth weights did not show any statistical significance. These results are comparable to those of Barton *et al*[20] and Piepert and Bracken[12]. A baby irrespective of gestational age weighing <2.5kg is taken as LBW neonates. Control group showed low birth weight of 23% while in study group the rate was 27%. But this difference was not statistically significant. Though many authors report an increase in LBW babies in older mothers, the present results agree with those of others like Prysak *et al* [18], Edge and Laros[16], Bianco *et al* [11], Piepert and Bracken [12], Grimes and Goss[17], Mukherjee and Chowdhury [13] who did not find an increase in LBW babies. Rate of LBW babies in our study is higher

because of preterm births, poor maternal nutrition and weight gain, maternal anaemia, gestational hypertension and IUGR. The rates of congenital anomalies observed in study group and control group were 2% and 1% respectively. In the study group there was one baby with bilateral congenital talipes equino varus (CTEV), 1 anenvephaly, in control group 1 baby had hydrocephalous. There was no statistically significant difference between study group and controls in the incidence of congenital anomalies. Our data agree with those of Prysak *et al* [18] who did not find any increase in incidence of infant anomalies among cases (6.1%) and controls (5.2%). Higher rates of chromosomal anomalies have been reported in babies of older women by Prysak *et al* [18,] 0.9% in case as compared to 0.2% in controls. Edge and Laros[16] reported 6.3% chromosomal anomalies in case and 3.7% in controls. Sajeethakumari R *et al*[14] reported study group 3% and control group 0.5%. Perinatal morbidity was studied considering NICU admissions and duration of stay. The NICU admission rate in neonates of study group was 9% compared to 7% in controls. This difference is not statistically significant. The duration of stay is also comparable 3-6 days in cases and 2-4 days in controls. Thus, we did not find any increase in perinatal morbidity among babies of older women compared to younger women. These results can be compared with those of Kirz *et al*[21.] Perinatal mortality was recorded if there was death of foetus after 28 weeks of gestation and till 7 days after birth. Thus it included still births after 28weeks of gestation and early neonatal deaths.

No perinatal mortality was seen in the present study group and control.

## CONCLUSION

Various factors may force women to delay child bearing to an advanced age, which increases the risk of poor pregnancy outcome. This study shows that delivery at older age poses increased risks of caesarean. But perinatal or maternal morbidity is not increased. Therefore older pregnant women should be encouraged for early, regular antenatal checkup and also advised to deliver in a well equipped hospital, with competent obstetrician, neonatologists and anaesthesiologist.

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