

OBSTETRICAL AND NEONATAL OUTCOMES AMONG ELDERLY PRIMIGRAVIDAE AT A TERTIARY CARE HOSPITAL

Obstetrics & Gynaecology

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ABSTRACT

Background: In the past decade there has been a gradual shift towards delayed childbearing. The outcomes of these pregnancies often are more complicated, in terms of both maternal and neonatal aspects. This study aimed at finding significant associations between the age of these mothers and the obstetrical and neonatal outcomes. **Methods:** This prospective longitudinal study conducted over 19 months was based on patient interview, semi-structured questionnaire and written medical, labor room records from a tertiary care centre with around 5000 deliveries annually. Patients were recruited at first out-patient/in-patient visit, informed consent obtained and followed up in subsequent visits until delivery. The impact of advanced maternal age on maternal medical, obstetrical and neonatal outcomes were assessed using statistical analysis in SPSS software. **Results:** During the period of 19 months, there were a total of 202 patients over 35 years with the mean (SD) being 37 years (3.2). Cervical cerclage was more common among elderly primigravidae (p value 0.000). Gestational hypertension was significantly associated (p value 0.0027). Among medical disorders, elderly primigravidae had a significantly higher association of age and UTI (p value 0.003) as well as URTI (p value 0.027). There was a significant association of anemia as well (p value 0.032). Antenatal obstetric complications like IUFD (p value 0.007) and Prematurity (p value 0.043) were significant. Induction of labor (p value 0.028) was more likely than spontaneous onset of labor. Neonatal complications that were significant were prematurity (p value 0.045) and congenital/chromosomal abnormalities (p value 0.027). **Conclusion:** We found that pregnancy complications were more common among elderly primigravida. The neonatal outcomes also were complicated on account of age.

KEYWORDS

Advanced maternal age (AMA) · Bad Obstetric History · Congenital anomaly · Elderly primigravida · In-vitro fertilization (IVF) · Large for gestational age (LGA) · Neonatal death · Perinatal mortality · Pregnancy complications · Pregnancy outcome · Primiparity · Small for gestational age (SGA) · Stillbirth

INTRODUCTION

In the last three decades, there has been a trend towards deferred childbearing age. In the current modern society, there is a significant proportion of women who delay childbearing beyond the age of 35 years. Some of the common factors affecting postponement of childbearing are women's career priorities, tertiary education, availability of fertility control, late marriages and second marriages and changes in socio-cultural pattern.

The term elderly primigravida is used extensively in obstetric literature and by health care providers. The Council of International Federation of Obstetrics in 1958, defined elderly primigravidae as "one aged 35 years or older at her first delivery".¹

The increasing use of assisted reproductive technology (ART) over the past two decades has been seen to allow thousands of infertile couples to have children. Consequences of advancing maternal age however include outcomes of pregnancy both in women who have conceived via ART and in those who have conceived spontaneously. There is a need to know about obstetric consequences of advanced maternal age in order to provide better obstetric and perinatal care. Many underlying conditions, such as hypertension, diabetes, heart disease, obesity, or gynaecological diseases are seen to be increased with age.²

Advanced maternal age is a risk indicator for pregnancy complications such as spontaneous abortions, ectopic pregnancy, stillbirth, chromosomal abnormalities, twins, uterine fibroids, hypertensive disorders, gestational diabetes mellitus, prolonged labor, cephalopelvic disproportion necessitating operative delivery, bleeding disorders, placenta previa, low birth weight, antepartum and intrapartum fetal loss and neonatal mortality. Advanced maternal age is also seen to be an independent risk factor for low birth weight babies, preterm deliveries, placenta previa and infants being admitted to the special care baby unit.³⁻⁵

There is no evidence that women with a post-term pregnancy have an increased risk of antepartum fetal complications, but their babies do not tolerate labor as well as those of younger women, with more decelerations CTG traces and more caesarean section rates.⁶

Case Study

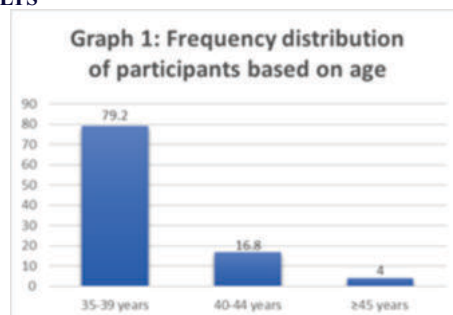
This was a hospital based prospective longitudinal study, conducted in a tertiary training centre for a period of 19 months. The study was approved by the subject committee and permission obtained from the ethical committee, the IEC.

All women aged 35 years and older, conceiving for the first time were enrolled in this study at first visit in the Outpatient department (OPD) or post referral to our casualty with a total of 202 patients were enrolled in this study. The case files of the women, all labor room registers, and in-hospital case records were utilized to get details of the elderly primigravidae included, and details of these patients were recorded in a proforma. Inclusion criteria were pregnant women aged 35 years or older that were pregnant for the first time and reporting to the tertiary centre for the first time.

Data regarding socio-demographic characteristic such as age, singleton/ multiple pregnancy, reason for delay in conception, mode of conception, gestational age at the time of delivery, pre-existing medical conditions, prior surgery for infertility, pregnancy complications (antenatal maternal complications and antenatal fetal complications), intra/postpartum complications, whether labor was induced or occurred spontaneously, reason for induction of labor, mode of delivery, reason for abdominal delivery and instrumental delivery, neonatal outcomes and duration of hospital stay were extracted from the case notes.

The information was coded and transferred into a proforma designed for this study. This was then transferred onto SPSS version 16 statistical software and analyzed. The socio-demographic characteristics, pregnancy complications and birth outcomes were presented as percentages on frequency tables. Descriptive statistics were used to calculate percentages, mean and standard deviation. The statistical significance was set at $P < 0.05$.

RESULTS



Graph – 1 Frequency Distribution Based On Age

Maternal Complications

During the study period, there were a total of 202 participants. Based on age, they were categorized into 3 age groups: 35-39 years, 40-44 years and ≥ 45 years as shown in Graph 1. Majority of the participants (79.2%) belonged to the age group of 35-39 years. Participants who were ≥ 45 years constituted only 4% of all the participants.

The mean gestation at the time of delivery was around 36 weeks and 1 day with a standard deviation of ± 2 weeks 5 days. 85.1% (175 patients) were singleton pregnancies and the remaining 14.9% (30 patients) had twins.

Among the causes 42.6% (86 patients) stated infertility as the cause for the advanced age at conception, while 30.2% (61 patients) had a delayed age at marriage. Table 1 demonstrates the frequency distribution of the mode of conception among the study subjects.

Table 1

Mode of conception	Number of patients, frequency
Spontaneous	144, 71.28%
IVF	48, 23.76%
ICSI	2, 0.99%
IUI	7, 3.4%
Ovulation Induction	1, 0.49%
Total	202 patients

Hypothyroidism was the most common comorbidity present with 40 patients (19.8% of all patients) followed by Chronic hypertension (18 patients, 8.9%), Overt diabetes mellitus (16 patients, 7.9%), fibroid uterus (16 patients, 7.9%), and heart disease (12 patients, 5.9%) but these were not statistically significant. A significant association was noted with Pulmonary TB and age of the participants ($p=0.027$).

157 patients (77.72%) had maternal antenatal obstetrical complications, with 60 patients (29.7%) requiring Induction of labor (IOL) as a result of it. Gestational diabetes mellitus (45 patients, 22.27%), cervical cerclage (41 patients, 20.29%), gestational hypertension (31 patients, 15.34%) and severe preeclampsia (23 patients, 11.38%) were common following this.

A highly significant statistical difference was noted between age and cervical cerclage (p value 0.000) as well as between the age of the participant and mild anemia (p value 0.032), gestational hypertension (p value 0.027), UTI (0.003) and URTI (p value 0.027).

The total number of infants born that were premature were 91 out of 202 deliveries (45.04% of total deliveries). Out of these, 57 patients out of the 91 preterm deliveries had presented in preterm labor (62.63% of preterm deliveries), which subsequently resulted in delivery of a premature newborn. The remaining 34 patients were terminated due to some antenatal complications.

Gestational diabetes mellitus had an incidence of 22.27%. Overt diabetes mellitus was seen in 16 patients (7.92%), and along with chronic hypertension and hypothyroidism, contributed to the majority of the pre-existing comorbidities.

Among the patients who had some form of diabetes during pregnancy (61 patients), almost half were seen to deliver prematurely, with 50% (8 patients) of patients with ODM delivering prematurely and 53% (24 patients) of patients with GDM delivering before 34 weeks. This is demonstrated in table 2.

Table 2

Antenatal complication	35-39 years	40-44 years	≥ 45 years	P value
Preterm labor	41	11	5	0.065
PPROM	6	2	0	0.712
PROM	10	1	0	0.584
Anemia- Mild	2	3	0	0.032*
Anemia- Moderate	3	0	0	0.671
Anemia- Severe	1	0	0	0.876
Placenta previa	6	3	1	0.28
APH	2	0	0	0.767
Abruption	1	0	0	0.876
Cervical encirclage	22	14	5	0.000*
GDM	31	11	3	0.146

Rh negative pregnancy	9	1	0	0.65
Gestational hypertension	19	10	2	0.027*
Pre eclampsia-Mild	4	3	1	0.161
Pre eclampsia-Severe	19	3	1	0.874
Eclampsia	0	1	0	0.084
DIC	1	0	0	0.876
Partial HELLP	2	0	0	0.767
HELLP	1	0	0	0.876
Deranged LFTs	3	1	1	0.165
Obstetric cholestasis	2	0	0	0.767
Scar dehiscence	1	0	0	0.876
Malpresentations- Breech	12	7	1	0.066
Malpresentations- Transverse	4	0	0	0.585
Malpresentations- Oblique	2	0	0	0.767
Chorioamnionitis	1	0	0	0.876
UTI	1	0	1	0.003*
RTI- URTI	2	0	1	0.027*
RTI-LRTI	1	0	0	0.867
Covid-19	1	0	0	0.876
Pulmonary edema	1	0	0	0.876
Post term pregnancy	0	1	0	0.084

62 patients (30.6%) had some or the other form of pregnancy related hypertensive disorder. The severity varied, as shown in graph 2.



Graph 2

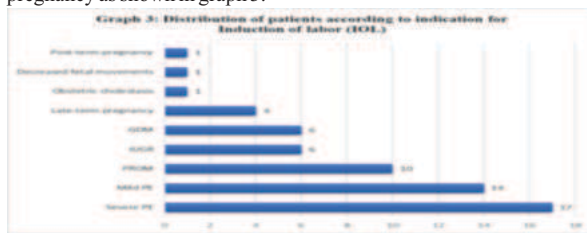
26 patients among 202 had malpresentation at the time of delivery. This gave an incidence of 12.87% for this study with breech presentation being the most common, with 20 patients (76.92%) out of 26 having breech presentation at the time of delivery. Overall incidence of breech presentation was calculated to be 9.9%. Transverse lie and oblique lie were the other malpresentations seen with 4 patients (1.98% overall incidence) and 2 patients (0.99% incidence) respectively.

The most common complication faced by the fetus was seen to be prematurity with 45.04% of the neonates who were born premature. This was followed by IUGR (14.3%) and Doppler changes (12.8%). A significant difference was seen between age and prematurity with p value 0.043. Intrauterine demise was seen to be more commonly reported in the age group of 40-44 years; this was a significant finding with p value 0.007.

Most were seen to go into labor spontaneously (40.1%), followed by 26.2% of participants who underwent an induced labor and finally those participants for whom this was not applicable.

Out of the 202 patients included in the study, 17.8% (36 pts) were pre planned for a LSCS.

Among the induced, the majority i.e. 28.3% (17 pts) were in view of severe preeclampsia. Other reasons for induction were Mild preeclampsia at term, PROM, IUGR, GDM, late-term pregnancy, Obstetric cholestasis, decreased fetal movements and Post-term pregnancy as shown in graph 3.



Graph 3

Out of the 202 deliveries, 64 patients (31.7%) underwent normal vaginal delivery (NVD). 11 patients had instrumental deliveries, with 4 pts (2.0%) delivering via Outlet forceps and 7 pts (3.5%) via vacuum.

Caesarean sections comprised the maximum number of outcomes (126 pts) in our study, with 106 patients (52.47%) undergoing an emergency LSCS and the remaining 21 patients (10.39%) undergoing a planned LSCS.

The most common indication for an LSCS was acute fetal distress (AFD), with 22.04% (28 pts) undergoing an emergency LSCS, followed by doppler changes, 15.74% (20 patients) and breech presentation with 13.38% (17 patients). Emergency cesareans comprised about 83.46% (106 patients) of the total, with the most common indication being AFD, followed by Doppler changes and breech presentation in labor. 10 patients underwent an emergency section due to prior uterine surgery. 16.53% (21 patients out of 127 total caesareans) underwent a routine/ planned LSCS. Prior uterine surgery was the commonest indication (9 patients), with planned sections being scheduled for women with prior history of cavity opening surgery/ other uterine surgeries. Breech presentation (3 patients) and failed induction (3 patients) closely followed.

11 patients (5.4%) delivered via instrumental delivery, out of which 7 patients delivered via vacuum delivery and 4 patients delivered via outlet forceps. All those who delivered via outlet forceps had second stage acute fetal distress (AFD). Indications for vacuum delivery included prolonged second stage (57.14% of vacuum deliveries) followed by maternal exhaustion being the second leading indication (42.86% of vacuum deliveries).

Among the intraoperative complications, most common were Blood transfusion and second stage LSCS followed by failed anaesthesia, hysterectomy, and uterine artery ligation. A patient at 32 weeks underwent Obstetric hysterectomy.

Majority had no postpartum complications. Sepsis, postpartum hemorrhage and ICU stay were reported by a few and this was not a significant finding. Among these those with sepsis reported evenly throughout all the categories of gestation periods. Those who reported ICU stay as a complication were seen to have visited the department at <32 weeks of gestation.

Neonatal Complications

Among 202 deliveries, 91 were that of preterm, giving it an incidence of 45.04%.

The most common complication seen among newborns was that of low birth weight (79 babies) incidence being 39.10%. The second most common complication was prematurity, followed by need for NICU stay (26.73%). The average birth weight for the issues in this study was found to be 2.282±0.675 Kgs.

109 patients delivered babies below 2.5 kg (53.96%), among which 79 babies (39.10%) were low birth weight, 25 babies (overall incidence 12.37%) were very low birth weight and 5 babies (2.47%) were extremely low birth weight. A highly significant difference (p value 0.000) was seen between age (>45 years) and shock as a neonatal outcome. A significant difference was also noticed with maternal age more than 35 years and moderate-late preterm birth (p value 0.045) and congenital anomalies/chromosomal abnormalities (p value 0.027).

DISCUSSION

Elderly primigravida are women who become pregnant for the first time after the age of 35 years.¹⁷ In the book, 'Essential over 35 pregnancy guide' by Lavin ER, Samuel H. Wood, 1998, complications such as instrumental deliveries, malpresentations, malpositions, prolonged labor, increased cesarean rate, induction of labor, pregnancy induced hypertension, diabetes mellitus, antepartum and postpartum hemorrhage were outlined. The elderly primigravida is believed to have decreased fertility and increased risk for adverse pregnancy outcomes.⁸

The study aimed to show that elderly primigravidae had significant perinatal and obstetric outcomes and aimed to highlight the need for careful follow-up and evaluation of the group. Priorities have been seen to change and the availability of birth control, late marriages, and re-marriages as well as changes in the socio-cultural patterns and

difficulty in finding the right partner also play a role in the postponement of the first child.⁷

The prevalence of elderly primigravidae could not be assessed from this study as it was a prospective longitudinal study without controls. All the patients that were included in the study were 35 years or older. Mean age was 37.47 years, with a standard deviation of ±3.2. This was comparable to the mean age of 36.8 years demonstrated by Moses et al¹⁰ and to that of 36.6 years by Sanjeethakumari et al¹¹. The minimum age was 35 years and the maximum age recorded was 52 years.

Among the reasons for delay in conception of the first child, 42.6% cited infertility (involuntary) as a cause for the delay. 27.2% of patients quoted voluntary delay (career prospects or family issues). 30.2% got married late. The percentage of involuntary fertility was less than that by Pradhan et al, which showed 67.62% of elderly primigravidae having involuntary infertility. Voluntary delay in conception was seen in 17.14% of women in the study.¹²

34.9% of patients were seen to have conceived spontaneously, having been unable to complete their course of treatment or delay in infertility treatment on account of COVID-19. This leads to the belief that there isn't a well-defined cause for infertility among couples investigated and that anxiety regarding the same might as well be a cause for delay in conceiving.

24 patients out of the 30 patients (80%) who had conceived spontaneously did not receive any medical or surgical treatment, furthering the idea that the sense of urgency in having a first child at a later age prompted unnecessary evaluation and intervention. 34.8% of patients with infertility had some form of fertility enhancing surgery. The surgical procedures were at times in combination, and the most common surgery performed was hysteroscopic adhesiolysis and hysteroscopic metroplasty.

40% of these patients underwent hysteroscopic adhesiolysis in this study. Causes for intrauterine adhesions range from uterine curettage in a gravid uterus to uterine infection, most commonly genital tuberculosis. Genital tuberculosis is associated with uterine cavity obliteration in more than half of the cases.¹³

Cervical incompetence is often associated with uterine malformations, whether metroplasty has been performed or not. This risk nonetheless warrants the use of the smallest possible diameter hysteroscope in order to avoid cervical dilatation; it should be followed up, if pregnancy ensues, by screening at regular intervals for incompetence by endo-vaginal ultrasonography after 18 weeks gestation.¹⁴ This was probably a cause for the high rate of cervical cerclage seen in our study, with 20.29% of women having some form of cervical cerclage done.

Uterine fibroids have a prevalence rate of 20-50% as seen in some post-mortem studies. They have been commonly associated with women often having infertility. Laparoscopic myomectomy at present is one of the most common procedures in infertile women.¹⁵

Prevalence of fibroid uterus in our study was seen to be 7.92%, with corresponding rates of laparoscopic and open myomectomy being 1.9% both. The prevalence of fibroid uterus was found to be more than that observed by Pradhan et al, which quoted a prevalence rate of 5.71%.¹²

Similar incidence was seen in study by Vasanthakumari et al, with 8% of pregnancies being complicated with a fibroid. This was seen to be 2 times more common than in the control group.¹⁶ Ibrahim et al reported a coexisting fibroid rate of 4.3%.¹⁷

A highly significant difference was noted between the mode of conception and singleton and multiple pregnancies, as well as the reason for delaying conception (p value – 0.000). All of the patients with twin pregnancy had a history of infertility, out of which 76.66% of twin pregnancies resulted from In vitro fertilization (IVF).

The most important non-genetic factor influencing the twinning rate (TWR) is maternal age, as seen in a study by Fellman et al.¹⁸ This was, however, not reflected in our study as spontaneous conception rates among twins were low, with just one patient conceiving spontaneously.

The proportion of multiple pregnancies were seen to be a result of the

use of artificial reproductive techniques (ART) in our study. The use of artificial reproductive technology has been associated with a substantial risk of multiple pregnancies.¹⁹

As per the Committee on Ethics, the first approach to the problem of multifetal pregnancies should be prevention, and strategies to limit multifetal pregnancies should be practised by all physicians who treat women for infertility.

Almost half of the elderly primigravidae had pre-existing conditions often in combination. Hypothyroidism was the most common comorbidity present, with 19.8% of all patients having the same. This result, however, was not significant (p value 0.747). 8.9% of patients had chronic hypertension, while 7.9% had overt diabetes mellitus, but both results were not found to be statistically significant.

Incidence of maternal heart disease was 6%, with a p value of 0.053, which was not significant. As seen in a study by Sangeethakumari et al, heart disease was found to be slightly less in the older group as compared to younger women (3.1% vs 3.6%).¹¹ The incidence of maternal heart disease in elderly women with respect to younger women could not be ascertained in this study. Mehdi et al reported an increase in prevalence of heart disease in older women.²⁰

The study showed an increased frequency of hypertensive disorders of pregnancy, preterm labor, gestational diabetes mellitus among the elderly primigravidae in the antenatal period, although this was not found to be statistically significant. 83.16% of the study group had antenatal complications, either fetal or maternal, leaving a mere 16.83% of patients with uncomplicated pregnancies. This was a higher rate as compared to the study by Sanjeethakumari et al, that showed 70% of women having antenatal complications.¹¹

This was also comparable with the rates of complications seen in other studies. Moses et al reported a complication rate of 87%, and demonstrated further that the rates of antenatal complications were 3 times higher in elderly primigravidae than in younger women.¹⁰

Our study is limited in the aspect that there isn't a control group for comparison and hence the difference in incidence of complications antenatally cannot be ascertained. In the 2017 study by Vasanthakumari et al, the incidence of antenatal complications was 51%, and the rate 4 times higher than that of younger women.¹⁶

Eleje et al reported a similar significant association between elderly women and incidence of urinary tract infection.²¹

Nagarwal et al reported a higher incidence of breech presentation in elderly women. This result was found to be statistically significant, unlike our study which showed no significance in the incidence of malpresentations. They reported that breech presentation was 2.6 times more likely in an elderly women.²²

Incidence of pregnancy related hypertensive disorders were found to be 30.6% in this study. Incidence of gestational hypertension was found to be statistically significant with a p value of 0.027. Pradhan et al, in 2019, conducted a study that showed an incidence of 18.09% for preeclampsia and 3.81% of eclampsia cases.¹² The incidence of preeclampsia was comparable to the 14.84% seen in our study.

Incidence of hypertensive disorders were reported to be 24% by Moses et al, 21% by Sangeethakumari et al, and 26.7% by Oparidan et al.^{10,11,23}

Pandit et al in their review put forth the notion that patients in age groups of 35-40 years had a higher proportion of patients with preeclampsia. They attributed it to increasing incidence of chronic hypertension with advancing age in older women and subsequent increased risk of superimposed preeclampsia. Incidence of preeclampsia was calculated to be 23.33% in this study.²⁴

Ilesanmi et al, Ibrahim et al and Anozie et al reported an incidence of 20% with respect to toxemia of pregnancy.^{17,25,26} A similar, but less percentage of women i.e., 13% were seen to have some form of preeclampsia in studies done by Vasanthakumari et al, Edge and Laros and V.O. Oboro et al.^{7,16,28}

22.27% of women in our study had Gestational diabetes mellitus. Majority of the women with gestational diabetes mellitus were seen to

be between the age of 35- and 39-years Overt diabetes mellitus was seen in 7.92% of women. The incidence was lower than that reported by Pandit et al, who showed a prevalence of 26.66%. Diabetes showed a rising trend as the age increased.²⁴

The rate observed in our study was significantly higher than the rate reported by Moses et al in 2015, in which 6% of women were seen to have gestational diabetes, comparable to Vasanthakumari et al which reported an incidence of 10% either alone or in combination with pregnancy induced hypertension.^{10,16}

Incidence of anemia was found to be 4.2%. Mild anemia was found to be statistically significant, with a p value of 0.032. Incidence of mild anemia was seen to be more among women between 40-44 years, followed by 35-39 years and none above the age of 45 years. The results obtained above were lower than that obtained by many other studies. Pradhan et al reported an incidence of 28.57%, while Pandit et al reported an incidence of 20% in elderly primigravidae. These results, although numerically high, were seen to be not significant.^{12,24}

Similarly, V Moses et al reported an incidence of 19%, while Opadiran et al showed just 13.3% of the study group having this complication. These rates too, were not significant, but were higher than those observed in our set up. The adequacy of antenatal care could not be assessed in this study but appears to be adequate as per the incidence of anemia.^{10,23}

Other Indian studies showed an incidence of 11% (Vasanthakumari et al) and 9.9% (Sanjeethakumari et al).^{11,16}

There was no association between age, gestation and indication of caesarean section for placental abruption was found in our study. Eleje et al reported a higher incidence of antepartum hemorrhage, with p value less than 0.05, indicating that this was statistically significant.^{21,25} Other studies also reported a significant association between age and incidence of placenta previa.^{7,17,29,33}

Among elderly women, the most common fetal complications, though not significant, were Intrauterine growth restriction (14.3%) followed by Doppler changes (12.8%) and Oligohydramnios (8.4%). There was a significant association between Intra Uterine fetal demise and age of the women, with there being an increasing incidence of IUFD as the age increased. Even though the incidence was just 2%, this was a significant finding with p value 0.007. Our result was similar to one done by Eleje et al in Nigeria in a five-year review at a resource poor setting. IUGR was seen to be higher in the study group composed of elderly women as compared to younger primigravidae. Even though this study had a bigger proportion of women delivering at or around term, the incidence of intrauterine growth restricted fetus was higher.²¹

The mean gestation for delivery among our patients was seen to be 36.1 weeks, with a standard deviation of ± 2 weeks and 5 days. Mean age of delivery as reported by other studies were 37.9 weeks by Urquhart et al, 38 ± 3 weeks by Eleje et al and 37.2 weeks by Opadiran et al.^{21,23,33}

Induction of labor among elderly primigravida was a significant finding, with a p value of 0.028. It was seen that older women were more likely to undergo induction of labor due to anteOboro and Dare reported a labor induction rate of 15%, which was less than that seen in our study.²⁸ Similarly, the induced labor rate was 11% as seen as by Moses et al.¹⁰

Preterm delivery rate was significantly higher among women in this study- and this finding was not statistically significant, with a p value of 0.065. Other studies noted incidence of preterm labor as follows: 17% by Moses et al, 14.95 by Urquhart et al, 20.51% by Anozie et al and 8.51% by Bako et al. Out of these, Anozie et al reported a significant difference in incidence of preterm labor, with just 5.13% of younger women delivering prematurely.^{10,25,33}

Caesarean Section Rate

Caesarean sections were the most common mode of delivery among women in this study, with 62.87% undergoing a caesarean section. This study found a statistically significant higher caesarean section rate among the elderly primigravidae. This could be because elderly primigravidae are more prone to obstetric complications that warrant caesarean section. Another reason for such high rates of caesarean delivery could be due to apprehension on the part of the treating

obstetrician associated with these high-risk pregnancies, more so when associated with infertility. Keeping a low threshold for intervention during normal labor also contributes to this.

Many are of the notion that these pregnancies are premium pregnancies or precious pregnancies, and hence necessitate the need for safe delivery without any risk or fetal compromise.

Our cesarean section rate was comparable to many studies^{11,22,16,23,24,26}, while others had lower cesarean section rates.^{10,17,20,21,28,35,36,37}

There was no significant finding noted during the intrapartum period. The rate of instrumental delivery did not increase with age. However, the most common indication for instrumental delivery was prolonged second stage, second stage AFD and maternal exhaustion. Eleje et al reported a higher rate of cephalon-pelvic disproportion, acute fetal distress and prolonged second stage among elderly women. These findings were found to be statistically significant. It was said that a prolonged second stage go to both significantly higher in elderly primigravidae due to hypotonia of the uterus.³⁴

Moses et al found no appreciable difference between elderly women and younger women in terms of instrumental deliveries.¹

Neonatal Complications

The study showed a significant proportion of patients delivering preterm and prematurity was found to be statistically significant. A significant proportion of babies were found to be low birth weight which probably corresponded with prematurity (p value 0.000). This result was statistically significant with a p value more than 0.05.

Majority of the women had APGAR more than 7 after the first minute of delivery. Anozie et al showed a significant difference of perinatal deaths, which was different as compared to our study. APGAR scores did not significantly differ in the study, but the babies born to older women were more likely to have the 1st minute score of less than 4 in the 1st minute. This was probably due to the high incidence of medical morbidities that predated labor.³⁵

Bako et al, Eleje et al, Ibrahim et al reported no significant difference between birth weight, APGAR, stillbirth rates between younger and older women.^{34,41}

Nagarwal reported a significant incidence of low birth weight babies. Also mean APGAR score of newborns of elderly women was found to be lower than that of younger women.²⁶

Ilesanmi et al was the only study that was seen to have report an early significant neonatal death rate.²⁶

Oboro et al showed significant lower weights and increased morbidity such as birth asphyxia, birth trauma, NICU admission among babies born to older women.⁴⁰ Opadiran showed that gestational age and mean birth weight were not statistically significant.³⁶

CONCLUSION

Elderly primigravidae had a lot of pre-existing comorbidities complicating pregnancy and childbirth. These were also seen to cause an increase in the number as well as risks associated with added antenatal complications. Antenatal complications were more common, with mild anemia, cervical encircilage, urinary tract infection, upper respiratory tract infection, IUFD being more significant (p value < 0.05). Induction of labor was more common, with severe preeclampsia being the most common indication. Acute fetal distress was more common, necessitating caesarean section, but it was not statistically significant.

There was a high rate of caesarean section, 62.86% which was not statistically significant. The most common indication was AFD. Among neonatal complications there was significant finding of prematurity, low-birth weight, and shock.

There were no significant post-partum or intraoperative complications.

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