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Maternal and Perinatal Outcome in Pregnancy above 30 Years

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ABSTRACT

Background: *Advanced maternal age is associated with variety of pregnancy complications like gestational hypertension, preeclampsia, eclampsia, GDM, oligohydramnios, polyhydramnios, anemia, and fetal complications like preterm and still birth. It is also associated with subfertility, chromosomal abnormalities and multiple gestation. Increasing maternal age is an independent and substantial risk factor for adverse perinatal and obstetric outcomes.*

Objectives: *To assess obstetric outcome in pregnancy above 30 years of age and to assess the perinatal outcome in terms of APGAR score, birth weight, NICU admission.*

Methods: *This is a prospective study conducted on 400 pregnant women who are 30 years and above, attending antenatal clinic at ESIC-MC & PGIMSR Hospital, Bangalore from March 2021- August 2022. Maternal and Neonatal outcomes were observed.*

Results: *Among 400 patients enrolled, Gestational Diabetes was seen in 16.3%, hypertensive disorders was found in 14.3%, hypothyroidism in pregnancy is seen in 13.8%, premature rupture of membranes are seen in 5.8 %, oligohydramnios is seen in 5.0%, anemia was seen in 4.3%, 4.0% cases had abortions, 3.5% had GTP, 1.8% had polyhydramnios, 1% had Twins, 0.8% had Ectopic, 0.8% had Hyperthyroidism, 0.5% had Low Lying Placenta, 0.3% had Eclampsia and 0.3% had Placenta Previa, Preterm cases were 16%, LSCS accounted for 51%, Vaginal Delivery for 40%, Instrumental Delivery for 2%, Instrumental Evacuation for 4%, IUD Expulsion for 1.8%, and Salpingectomy for 0.8% of cases and the babies admitted to NICU were 33.2%.*

Conclusion: *Although the likelihood of complications increases with age, patients can be reassured that regular antenatal, emergency obstetric care, and skilled personnel during labour improve overall maternal and fetal outcomes.*

Key words *— Advanced Maternal Age; Gravida; Maternal Outcome; Neonatal Outcome; GDM; Hypertensive Disorders*

INTRODUCTION

Worldwide, over the past three decades, there has been a steady trend towards late marriages and delay in pregnancy, especially among the literate women who focus on their career opportunities. Also, other factors such as effective birth control, advancements in assisted reproductive technology, increasing rate of divorce followed by remarriage have contributed to rise in incidence of elderly pregnancy [1].

Advanced maternal age signifies the age after 35 years at the time of delivery which implies decreased fertility and increased risk. The opinion regarding advanced maternal age varies in each country. Most of the western physicians considered age more than 35 years as elderly but, in our country, where more than half of the marriages occur in second and early third decade of women ‘s life, age more than 30 years is considered elderly [2].

Although changes in socioeconomic circumstances and advances in ART have contributed to a shift toward childbearing later in life, this new trend may pose a clinical risk [3]. It is known that advanced maternal age is associated with gestational hypertension, preeclampsia, eclampsia, GDM, oligohydramnios, polyhydramnios, anemia, and fetal complications like preterm and still birth. It is also associated with subfertility, chromosomal abnormalities and multiple gestation [4]. Furthermore, systematic reviews and meta-analyses have shown that AMA increases the risk of Caesarean birth [5] and is a risk factor for stillbirth [6]. The increased occurrence of some adverse perinatal outcomes in older women can be attributed to the increased frequency of coexisting pregnancy complications observed in these women, such as gestational hypertensive diseases and gestational diabetes, because the association between advanced maternal age and these adverse perinatal outcomes disappeared when pregnancy complications were considered as confounding factors [7].

Although fetomaternal complication is increased in Elderly Pregnancy, with adequate antenatal care, early recognition [8] of complication and timely intervention, optimum outcome can be expected. Also, it is important to counsel the young woman about the favourable maternal and neonatal outcome in younger age. Therefore, purpose of this study was to evaluate maternal and perinatal outcome in pregnancy above 30 years of age.

MATERIAL AND METHODS

Study type: Prospective Observational study
Study place: ESIC-PGIMSR, Rajajinagar, Bangalore
Study period: March 2021 to August 2022
Sample size calculation: With 95% confidence level and margin of error of ±5%, a sample size of 400 subjects were taken to determine the maternal and perinatal outcome in pregnancy above 30 years of age.

By using the formula: $n=\frac{z^2p(1-p)}{d^2}$

where Z = z statistic at 5% level of significance
d is margin of error
p is anticipated prevalence rate

Inclusion Criteria

1) Patients willing to give written informed consent.
2) All pregnant women of > 30 years of age without chronic disorders will be considered in this study.

Exclusion Criteria

1) Overt diabetes mellitus.
2) Chronic hypertension.
3) Other chronic medical disorders like epilepsy and chronic renal disease.

PROCEDURE

After obtaining approval and clearance from the institutional ethics committee, considering the inclusion and exclusion criteria all pregnant women of more than 30 years of age who attend antenatal clinic in the Department of Obstetrics and Gynaecology, ESICMC & PGIMSR from MARCH 2021 to AUGUST 2022 were included in this prospective study.

Statistical Analysis

All characteristics were summarized descriptively. For continuous variables, the summary statistics of N, mean, standard deviation (SD) were used. For categorical data, the number and percentage were used in the data summaries and data was analyzed by Chisquare test for association, comparison of means using t test, ANOVA, sensitivity, specificity and diagrammatic presentation.

RESULTS

In our study, the mean age of the subjects was 32.6 ± 2.34 years. Mean Duration of Married Life was 6.88 ± 2.83 years. 17.2% were primigravida and 82.8% were multigravida. 36% had history of miscarriage, 11.8% had previous fetal loss, 31% had previous history of caesarean section. In the distribution of complaints, safe confinement accounted for 47.8%, pain abdomen for 39.2%, pervaginal leak for 5.8%, missed abortion for 2.5%, decreased DFMC for 1.8%, IUD for 1.8%, and vaginal bleeding for 1.2% as shown in figure 1.

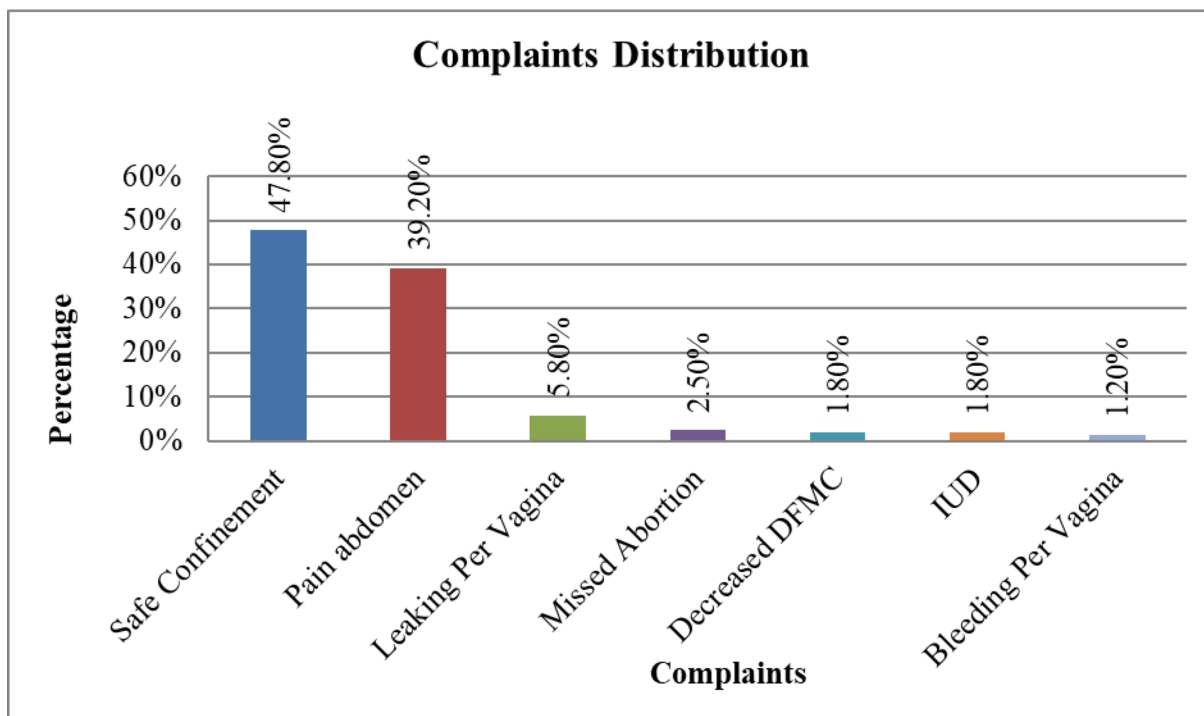

Fig. 1: Bar diagram showing complaints distribution in the study group

In our study, 71.3% of pregnant mother had risk factors. Of which 16.3% of women had gestational diabetes mellitus, 14.3% had gestational hypertension, 13.8% had hypothyroidism in pregnancy, 5.8% had premature membrane rupture, 5% had oligohydramnios, 4.0% had abortions, 4.3% had anemia, 3.8% had both gestational diabetes mellitus and gestational hypertension, 3.5% had GTP, 1.8% had polyhydramnios, 1% had Twins, 0.8% had Ectopic, 0.8% had Hyperthyroidism, 0.8% had Low Lying Placenta and 0.3% had Eclampsia as shown in figure 2.

Gestational diabetes mellitus and hypertensive disorders in pregnancy are the most common high-risk factors.

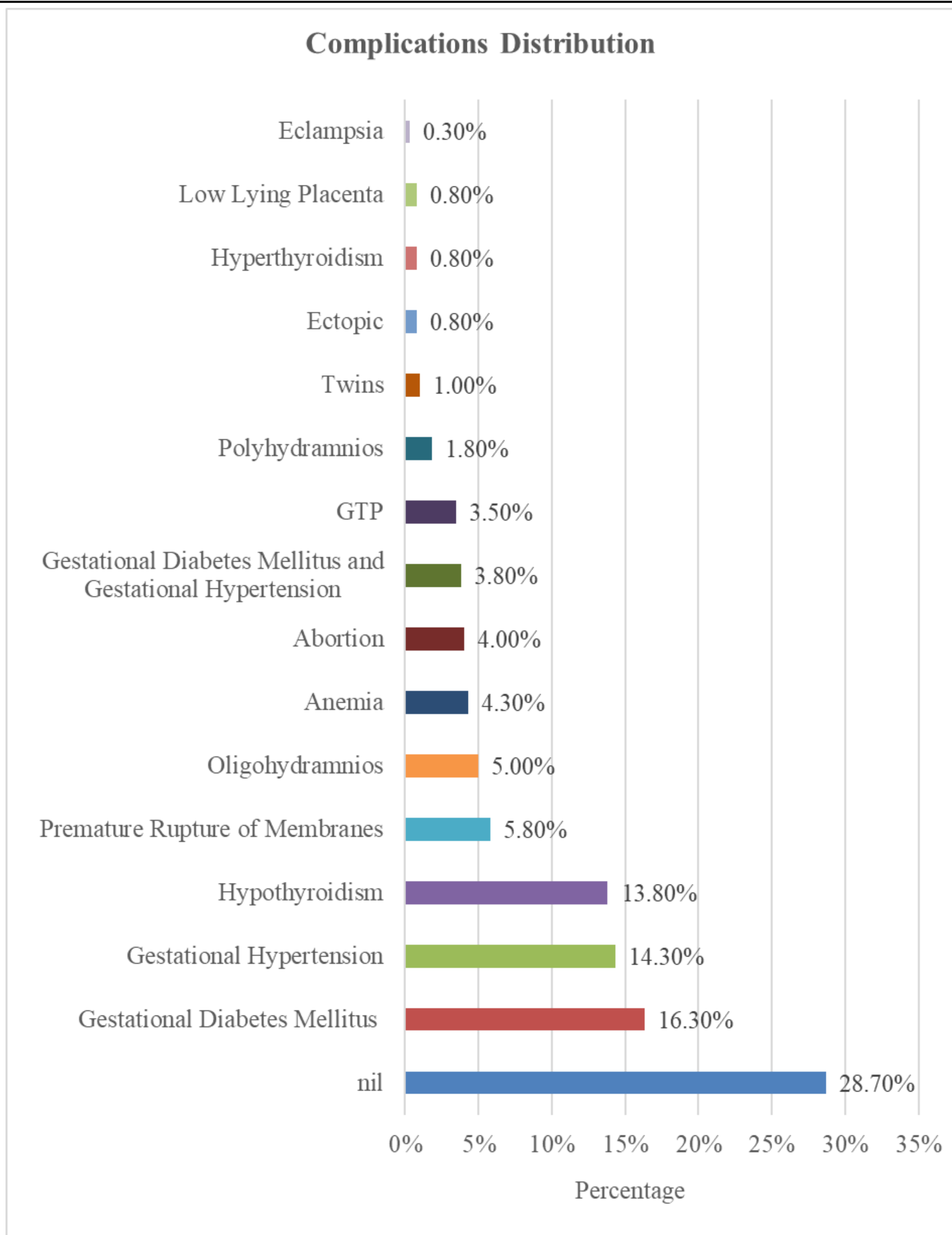

Fig. 21: Column Diagram Showing Complications distribution in the study group

In terms of pregnancy outcome, LSCS accounted for 51%, Vaginal Delivery for 40%, Instrumental Evacuation for 4%, Instrumental delivery for 2.0%, IUD Expulsion for 1.8%, and Salpingectomy for 0.8% of cases. Various indications for LSCS of our study group has been shown in the table 1.

Table 1: Indication for LSCS distribution in the study group

Indication for LSCS	Frequency (n=204)	%
Previous LSCS not willing for TOLAC	125	61.3%
CPD	29	14.2%
Foetal Distress	26	12.7%
Breech	11	5.4%
Failed Induction	10	4.9%
Abruption	3	1.5%

In our study, Mean Birth Weight was 2.8914 ± 0.453 kgs. 17.4% were less than 2.5 kg and 82.6% was More than 2.5 kg. 72.5% neonates had 5 min APGAR score of >=7 and 27.5% had score of <7 which improved after resuscitation. 33.2% were admitted to NICU and transferred to motherside on later days. There was no neonatal mortality.

DISCUSSION

As more and more women postpone childbearing upto the age of 30 years, the impact on maternal and perinatal outcomes becomes increasingly relevant. Advanced maternal age is associated with an increased risk of a variety of adverse pregnancy outcomes, including NICU admission, low birth weight, low 5-minute Apgar score, preterm deliveries, and increased maternal complications such as diabetes and hypertension. Because of the rising trend of postponed childbearing as a result of education, career opportunities, and assisted reproductive techniques, these findings are of particular interest to both women and their healthcare providers [9]. Our study aimed to determine the relationship between advanced maternal age and poor maternal and fetal outcomes. In our study, Primigravida are 17.2% and multigravida are 82.8% which is similar to the study done by Bilal-ur-rehman et al [10] who showed 17.5% primigravida and 82.5% multigravida.

Gestational Diabetes was seen in 16.3% in older mothers. It is believed that as people age, their cell function and insulin sensitivity decline, and their lipid profile metabolism becomes more dysfunctional, leading to the development of diabetes [11]. Asian Ethnicity may also play a role in development of Gestational Diabetes Mellitus.

Hypertensive disorders were found in 14.3%. As pregnancy advances maternal adaptation results in high flow, lower resistance circulation, and a decrease in mean blood pressure, which is impaired in older women, leading to the development of pre-eclampsia. One proposed explanation is that the uterine vasculature fails to adapt to the increased hemodynamic demands of pregnancy as women age. Overweight or obesity is a risk factor for pre-eclampsia in advanced maternal age.

In the present study, hypothyroidism is seen in 13.8% which is similar to the study done by Kritina Singh et al [12] - 13.4%.

In our study, patients who delivered vaginally were 43.3%. As the age advances, labour becomes more difficult due to a rigid perineum and less reserve power of uterine contractions due to a decrease in the number of oxytocin receptors. Endothelial dysfunction and impaired

uterine contractions with older age can result in insufficient uterine and utero-placental function. LSCS rate – 54.5% is slightly higher in our study group. There is a high risk of caesarean section in the elderly age group due to the presence of high-risk factors such as an increased incidence of medical disorders and labour abnormalities. Other factors include a lower clinical threshold for intervention among elderly women, higher socioeconomic status, conception through ART, paternal advancing age, and medico-legal concerns. Being a tertiary care hospital, with availability of anaesthetists, ICU/NICU facility and Blood Bank facility round the clock, the rate of slightly LSCS is higher in our Institution.

In our study, rate of low-birth-weight babies was 12.7% which is similar to the study done by Rajput et al[13] and Kahveci et al [14] who reported 13.19% and 11.5% respectively. The babies admitted to NICU were 33.2%. Lower educational levels and place of residence are powerful determinants of perinatal outcome. Advance maternal age has also been linked to a number of significant neonatal outcomes, including LBW, SGA, and preterm birth. Medical disorders may also play a role. All of these factors can lead to an increase in NICU admissions

CONCLUSION

Regardless of the underlying mechanisms, these findings confirm that extreme maternal ages have a negative impact on pregnancy. Because the trend of postponing childbearing is well-established and likely to continue, maternal care providers should carefully consider these findings in order to adequately inform women, provide evidence-based knowledge to support their procreation choices, and improve clinical surveillance aimed at identifying early signs of adverse outcomes. Early identification of women at high risk of adverse outcomes would aid in surveillance and intervention.

REFERENCES

1) Minoo R, Amirzadeh S, Mirblook F &Soltani MA. The effect of maternal age on pregnancy outcome. Asian Journal of Medical Sciences. 2010; 2(3):159-162.
2) Dutta DC. Complicated pregnancy. In: Hiralalkonar, editor. Textbook of Obstetrics. 8thed. New Delhi: Jaypee brother medical publisher(p) Ltd; 2015. p.398.
3) Lean SC, Derricott H, Jones RL, Heazell AEP. Advanced maternal age and adverse pregnancy outcomes: A systematic review and meta-analysis. PLoS ONE 2017; 12(10):e0186287
4) Cleary-Goldman J, Malone FD, Vidaver J, Ball RH, Nyberg DA, Comstock CH, et al. Impact of maternal age on obstetric outcome. Obstet Gynecol 2005; 105(5):983-90.
5) Bayrampour H, Heaman M. Advanced maternal age and the risk of cesarean birth: a systematic review. Birth. 2010; 37:219-226.
6) Huang L, Sauve R, Birkett N, Fergusson D, van Walraven C. Maternal age and risk of stillbirth: a systematic review. Canadian Medical Association Journal. 2008;178:165-172.
7) Liou JD, Hsu JJ, Lo LM, Chen SF, Hung TH. Advanced maternal age and adverse perinatal outcomes in an Asian population.European Journal of Obstetrics & Gynecology and Reproductive Biology. 2010 Jan 1;148(1):21-6.
8) Bianco A, Stone J, Lynch L, Lapinski R, Berkowitz G, Berkowitz RL. Pregnancy outcome at age 40 and older.Obstetrics & Gynecology. 1996 Jun 1;87(6):917-22. Farzin L, Sajadi F. Comparison of serum trace element levels in patients with or without pre-eclampsia. Journal of research in medical sciences: the official journal of Isfahan University of Medical Sciences. 2012 Oct;17(10):938.

9) Khalil A, Syngelaki A, Maiz N, Zinevich Y, Nicolaides KH. Maternal age and adverse pregnancy outcome: a cohort study. Ultrasound in Obstetrics & Gynecology. 2013 Dec;42(6):634-43.
10) Rehman BU, Sirwal RK, Wani FA. A comparative prospective study of maternofetal outcome in advanced and younger maternal age group in higher socioeconomic strata. Int J Reprod Contracept Obstet Gynecol 2017;6:1362-7.
11) Shan D, Qiu PY, Wu YX, Chen Q, Li AL, Ramadoss S, et al. Pregnancy outcomes in women of advanced maternal age: A retrospective cohort study from China. Scientific Reports. 2018; 8:122-39.
12) Singh K, Shrestha P, Baaniya J, Gurung P. Pregnancy Outcome Among Primigravidae Aged 35 Years and Above: A Comparative Study. Journal of Lumbini Medical College. 2020 Jun 15;8(1):17-21.
13) Rajput N et al. Effects of advanced maternal age on pregnancy outcome. Int J Reprod Contracept Obstet Gynecol. 2018 Oct;7(10):3941-3945
14) Kahveci B, Melekoglu R, Evruke IC, Cetin C. The effect of advanced maternal age on perinatal outcomes in nulliparous singleton pregnancies. BMC pregnancy and childbirth. 2018 Dec;18(1):1-7.