

STUDY ON THE EFFECT OF ADVANCED MATERNAL AGE AT OBSTETRIC AND PERINATAL LEVEL

Obstetrics & Gynaecology

Juliya John*	PG Student, Dept. of Obstetrics and Gynecology, Jubilee Mission Medical College and Research Institute, Kerala, India. *Corresponding Author
Aswath Kumar	Professor, Dept. of Obstetrics and Gynecology, Jubilee Mission Medical College and Research Institute, Kerala, India.
Saley Daniel	Associate Professor, Dept. of Obstetrics and Gynecology, Jubilee Mission Medical College and Research Institute, Kerala, India.

ABSTRACT

INTRODUCTION: Advanced maternal age is commonly considered to be 35 years or older. The association between adverse perinatal outcomes and advanced maternal age has been a matter of controversy in several studies. While some researchers have noted an increased rate of adverse pregnancy outcomes in women older than 35 years, others have failed to find any association between advanced maternal age and adverse perinatal outcomes. This discordance in conclusions could be attributed to the heterogeneity of study populations, differences in the definition of pregnancy outcomes, and failure to adjust for potential confounders. Therefore, we aimed to investigate the impact of advanced maternal age on obstetric and perinatal outcomes in this study.

MATERIALS AND METHODS: The study was carried out among the patients who presented to the labour ward. This is a prospective observational study. The demographic data of these women, gestational age at time of delivery and complication during pregnancy are noted. They will be followed up till discharge and mode of delivery, perinatal outcome and any intrapartum and postpartum complications will be recorded in the research proforma.

Sample Size: 252.

RESULTS: Though there were higher incidence of Gestational hypertension, PROM, Preterm labour, placenta previa, Malpresentation, Multiple Pregnancy, FGR and treatment taken for infertility among the study group when compared to control group, their statistical significance could not be established. There was also higher incidence of caesarean section (50.8%) and Operative vaginal delivery (2.6%) in the study group. There was no statistically significant weight difference among the babies born to mothers in case and control group.

CONCLUSION: Pregnant women of Advanced Maternal Age is thought about with great concern among the doctors as well as patients. In this study, there is an increased incidence of antenatal complications like Gestational Diabetes Mellitus, Gestational Hypertension, Caesarean Section and Preterm labour in women aged more than 35 years compared to the women of age 20 to 35 years.

KEYWORDS

AMA, GDM, Overt DM, FGR, PROM, PREVIOUS CS, Birth weight, Neonatal outcome

INTRODUCTION

The Council of International Federation of Obstetrics defines "An Elderly Primigravida is one 35 years or more at the first delivery." Beyond the age specific definition, it's a proven fact that advanced maternal age is linked with various adverse outcomes like chromosomal abnormalities, sub fertility, chronic medical illness, and fibroids.(3)

Also, in women with advanced maternal age there is increased need for antepartum surveillance, induction of labour and caesarean section. Although there are various literature published describing the impact of advanced maternal age on maternal and fetal outcomes, most of them have conflicting results.(4) For example, delayed pregnancy and poor pregnancy outcomes are shown in few studies while other studies challenge these findings.

There are reasons to re-evaluate the relationship between advanced maternal age and adverse perinatal outcomes. It's not evident whether women in South Asia are at increased risk for adverse perinatal outcome following delivery after 35 years as majority of the studies have investigated European and American populations.(5) And also birth certificates were used to collect data that were subject to misclassification and informational errors(6). The variation in the results of studies can also be attributed to the heterogeneity of study populations(6)

There are reasons to re-evaluate the relationship between advanced maternal age and adverse perinatal outcomes. It's not evident whether women in South Asia are at increased risk for adverse perinatal outcome following delivery after 35 years as majority of the studies have investigated European and American populations.(5) And also birth certificates were used to collect data that were subject to misclassification and informational errors(6).

The variation in the results of studies can also be attributed to the heterogeneity of study populations(6)

MATERIALS AND METHODS

This is a prospective observational study. The women are enrolled for the study from labour ward after taking informed consent.

Pregnant women satisfying the inclusion criteria are divided into two groups based on their age as women of 35 years or more and other group comprising of women 20 to 35 years.

INCLUSION CRITERIA

- Pregnant women of age 35 or more, multigravida with gestational age more than 28 weeks.
- Pregnant women of age between 20 to 35 years, multigravida with gestational age more than 28 weeks.

EXCLUSION CRITERIA

- Pregnant women of age < 20 years
- Primigravida
- Pregnant women of gestational age less than 28 weeks

STATISTICAL METHODS

Chi-square/ Fisher Exact test has been used to find the significance of study parameters on categorical scale between two or more groups, Non-parametric setting for qualitative data analysis. Fisher Exact test used when cell samples are very small.

Significant figures

+ Suggestive significance (P value: 0.05 < P < 0.10)

* Moderately significant (P value: 0.01 < P < 0.05)

** Strongly significant (P value: P < 0.01)

Statistical software: The Statistical software namely SPSS 22.0, and R environment ver.3.2.2 were used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, tables etc.

RESULTS

Out of the 252 patients studied, 126 belonged to the control group and

126 in the study group. 98% of patients in the study group was in the age of 20 to 30 years. 90.5% of patients in the study group was in the age group of 35 to 40 years. 43.5% of patients in the study group entered pregnancy with pre-existing complications like Chronic Hypertension (3.2%), overt DM (2.4%), Fibroid complicating pregnancy (2%), Hypothyroidism (2.8%) and previous CS (28.6%). Out of the various obstetric complications studied, GDM had statistically higher incidence in the study group (P value <0.001).

Though there were higher incidence of Gestational hypertension, PROM, Preterm labour, placenta previa, Malpresentation, Multiple Pregnancy, FGR and treatment taken for infertility among the study group when compared to control group, their statistical significance could not be established. There was also higher incidence of caesarean section (50.8%) and Operative vaginal delivery (2.6%) in the study group. There was no statistically significant weight difference among the babies born to mothers in case and control group. P=0.467, Not significant, Chi square test. 94.4% of babies in the control group and 92.2% of babies in the study group had no neonatal complications. 4% babies in the control group and 5.6% babies in the study group had APGAR Score <7/10. of neonatal death were equal among both groups(1.6%)

VARIABLES

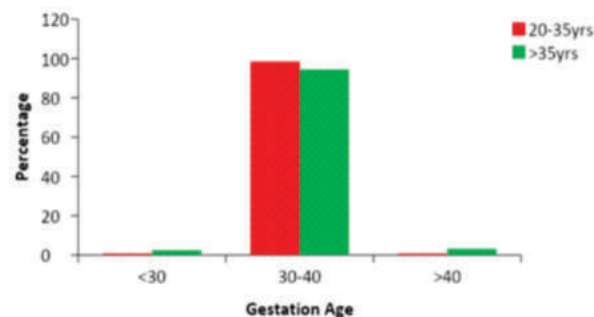


Figure 1: Gestation Age in weeks distribution in two groups of patients studied

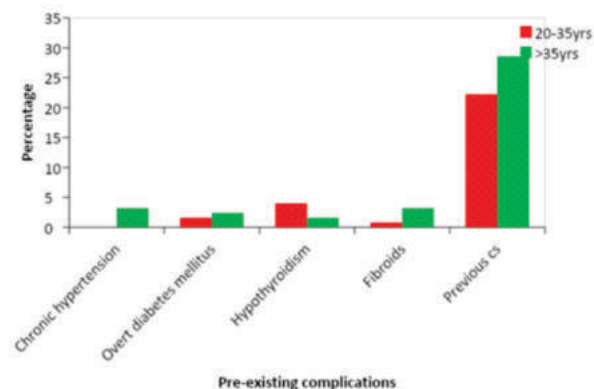


Figure 2: Pre-existing complications distribution in two groups of patients studied

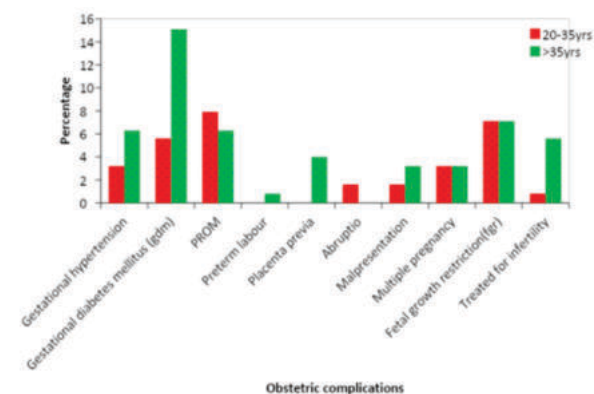


Figure 3: Obstetric complications distribution in two groups of patients studied

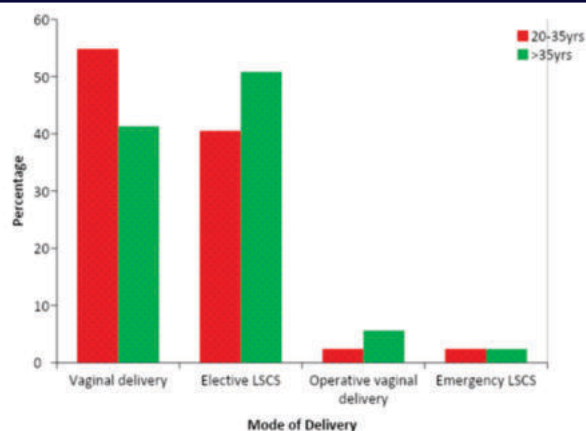


Figure 4: Mode of Delivery distribution in two groups of patients studied

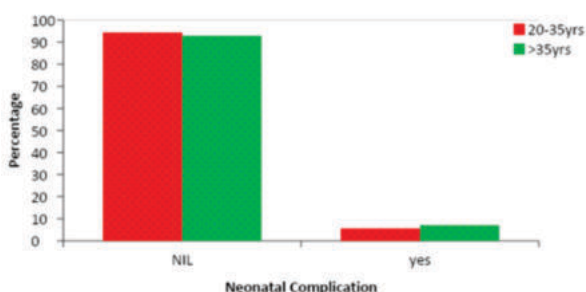


Figure 5: Neonatal Complication distribution in two groups of patients studied

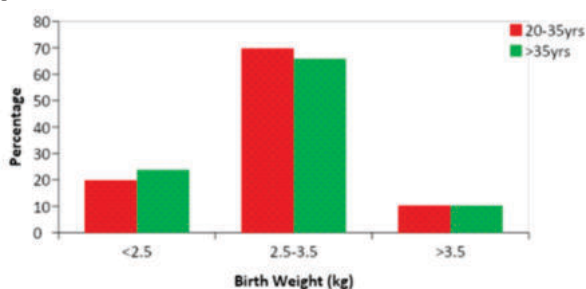


Figure 6: Birth Weight (kg) distribution in two groups of patients studied

CONCLUSION

In this study, there is an increased incidence of antenatal complications like Gestational Diabetes Mellitus, Gestational Hypertension, Caesarean Section and Preterm labour in women aged more than 35 years compared to the women of age 20 to 35 years. But these higher incidences were not statistically significant. Thus, implying that with proper antenatal care and counselling, the risk of childbearing in women with advanced maternal age can be brought down comparable to mothers of younger age group. Pregnant women of Advanced Maternal Age is thought about with great concern among the doctors as well as patients. In this study, there is an increased incidence of antenatal complications like Gestational Diabetes Mellitus, Gestational Hypertension, Caesarean Section and Preterm labour in women aged more than 35 years compared to the women of age 20 to 35 years. But these higher incidences were not statistically significant other than for Gestational Diabetes Mellitus. Thus, implying that with proper antenatal care and counselling, the risk of childbearing in women with advanced maternal age can be brought down comparable to mothers of younger age group.

Conflict of interest: None

REFERENCES

1. D'Couth S, Sukumarapillai J, Vimalraj S. A COMPARATIVE STUDY ON THE OBSTETRIC OUTCOME WITH INCREASING AGE IN PRIMIGRAVIDAE. J Evol Med Dent Sci. 2016 Sep 19;5(75):5573-7.
2. Montan S. Increased risk in the elderly parturient. Curr Opin Obstet Gynecol. 2007 Apr;19(2):110-112.
3. 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 May;105(5, Part 1):983–90.
4. Sydsjö G, Lindell Pettersson M, Bladh M, Skoog Svanberg A, Lampic C, Nedstrand E. Evaluation of risk factors' importance on adverse pregnancy and neonatal outcomes in women aged 40 years or older. *BMC Pregnancy Childbirth.* 2019 Mar 13;19(1):92.
 5. Hung T-H. Advanced Maternal Age and Adverse Perinatal Outcome: A Call for Investigations on Asian Women. *Taiwan J Obstet Gynecol.* 2008 Sep;47(3):257–8.
 6. Kahveci B, Melekoglu R, Evruke IC, Cetin C. The effect of advanced maternal age on perinatal outcomes in nulliparous singleton pregnancies. *BMC Pregnancy Childbirth.* 2018 Dec;18(1):343.
 7. Braveman FR. Pregnancy in Patients of Advanced Maternal Age. *Anesthesiol Clin N Am.* 2006 Sep 1;24(3):637–46.
 8. Carolan M. The Graying of the Obstetric Population: Implications for the Older Mother. *J Obstet Gynecol Neonatal Nurs.* 2003;32(1):19–27.
 9. Jacobsson B, Ladfors L, Milsom I. Advanced Maternal Age and Adverse Perinatal Outcome: *Obstet Gynecol.* 2004 Oct;104(4):727–33.
 10. Rajput N, Paldiya D, Verma YS. Effects of advanced maternal age on pregnancy outcome. *Int J Reprod Contracept Obstet Gynecol.* 2018 Sep 26;7(10):3941.
 11. Bianco S. Delayed Childbearing and the Outcome of Pregnancy | *NEJM* [Internet]. [cited 2020 Apr 5]. Available from: <https://www.nejm.org/doi/full/10.1056/NEJM199003083221004>
 12. Callaway LK, Lust K, McIntyre HD. Pregnancy outcomes in women of very advanced maternal age. *Aust N Z J Obstet Gynaecol.* 2005 Feb;45(1):12–6.