

## Maternal Age and Pregnancy Outcome

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### Abstract

*Background:* Maternal age plays important role in pregnancy outcome. *Aim:* To study various pregnancy outcomes in different age group. *Materials and Methods:* It is a retrospective study in which records were studied by follow up from January 2017 to June 2017. Their demographic features, associated maternal conditions, adverse maternal and perinatal outcome were noted. *Results:* Out of 917 records studied total 754 pregnant women were recruited for the study after excluding cases of missing information. In them 56.36% were in age group of 20-29 years. Women below 19 years were 9.42% and women above 40 years were 3.85%. In them 71.83% women below 19 years had anemia where as 51.76% in the age group 20 - 29 years had anemia. Hypertension and gestational diabetes was more common in women more than 40 years (10.34% & 24.14% respectively). Bleeding problems in pregnancy like APH & PPH was also more common in women aged above 40 years (6.89% in both conditions). Normal vaginal delivery was more in age group 20 - 29 years (96.24%) where as cesarean was more in women aged above 40 years (82.76%). Baby NICU admission was seen more (38.03%) in women aged less than 19 years and there were 2 perinatal death in study group in them 1 was below 19 years and 1 was above 40 years. *Conclusion:* Maternal age plays important role

in pregnancy outcome. One of the methods to reduce perinatal and maternal morbidity and mortality is by educating people about ideal age to have children.

**Keywords:** anemia; hypertension; preterm delivery; cesarean section.

### Introduction

Country like ours where there are many religions and languages and hence many cultural beliefs and practices. Now a day's women are marrying at later ages [1-7]. Quiet Often used definition of advanced maternal age is 35 years or more. Many studies have done to find out effects of maternal age and pregnancy outcome like stillbirth, pre eclampsia, gestational diabetes mellitus (GDM), preterm birth and elective or emergency Cesarean section [8-15]. These studies also showed variations in the results which were due to various populations studied. In this study we planned to study the impact of maternal age in pregnancy outcome.

### Methodology

It is a retrospective study conducted in Srinivas institute of Medical Sciences and Research Centre, Mangalore fetal medicine

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centre and other private hospitals. The records were studied by follow up from January 2017 to June 2017. Their demographic features, associated maternal conditions, adverse maternal and fetal conditions noted and tabulated. And analysis was done using SPSS (IBM, USA.) window software program.

## Results

Out of 917 records studied total 754 pregnant women were recruited for the study after excluding cases of missing information regarding the maternal age and pregnancy outcomes. In our study the age of pregnant women was in the range of 18 – 43 years. In them 425 (56.36%) were in age group of 20-29 years. Surprisingly we had 71(9.42%) women in the age group <19 years as shown in Table 1.

Table 1:

Age group	Distribution	Percentage
< 19 years	71	9.42
20 – 29 years	425	56.36
30 – 39 years	229	30.37
>40 years	29	3.85

Out of 754 pregnant women anemia was seen in 411 (54.50%) women. In that 71.83% women below 19 years had anemia where as 51.76% in the age group 20–29 years had anemia. Hypertension was seen 33 (4.37%) of pregnant women. GDM was seen in 21 (2.78%) pregnant women. Hypertension and gestational diabetes was more common in women more than 40 years (10.34% & 24.14% respectively). Bleeding problems in pregnancy like APH was seen in 5 (0.66%) pregnant women and PPH was seen 7 (0.92%) pregnant women in our study. In that APH & PPH was also more common in women aged above 40 years (6.89%

Table 2:

Complications	< 19 years (n= 71)	20 – 29 years (n= 425)	30 – 39 years (n= 229)	>40 years (n= 29)
Anemia (n= 411)	51(71.83%)	220(51.76%)	121(52.84%)	19(65.52%)
Hypertension (n= 33)	5(7.04%)	16(3.76%)	9(3.93%)	3(10.34%)
GDM (n= 21)	1(1.41%)	8(1.88%)	5(2.18%)	7(24.14%)
APH (n= 5)	1(1.41%)	1(0.24%)	1(0.44%)	2(6.89%)
PPH (n= 7)	1(1.41%)	2(0.47%)	2(0.87%)	2(6.89%)
Preterm delivery (n= 42)	9 (12.67%)	17(4.00%)	9(3.93%)	7(24.13%)
Vaginal Delivery (n= 556)	30 (42.25%)	409 (96.24%)	112 (48.91%)	5(17.24%)
Cesarean section (n= 198)	41 (57.75%)	16 (3.76%)	117 (51.09%)	24 (82.76%)
NICU admission (n= 166)	27(38.03%)	105(24.71%)	29(12.66%)	8(27.59%)
Perinatal Death (n= 2)	1(1.41%)	0	0	1(3.45%)

in both conditions). Preterm delivery was seen in 42 (5.57%) pregnant women. In that it was more common in women aged more than 40 years (24.13%). Normal delivery was seen in 556 (73.74%) pregnant women. Normal vaginal delivery was more in age group 20 – 29 years (96.24%) and it was less in women who were above 40 years (17.24%). Cesarean section was seen in 198 (26.25%) pregnant women it was more in women aged above 40 years (82.76%). Baby NICU admission was seen in 166 (22.01%) pregnant women. It was seen more (38.03%) in women aged less than 19 years and women aged more than 40 years (27.59%). there were 2 perinatal death in study group in them 1 was below 19 years and 1 was above 40 years. Perinatal death was seen in 2 (0.26%) pregnant women. In that 1 was seen in women aged less than 19 years and another in women aged more than 40 years as shown in Table 2.

## Discussion

As because of late marriages there is tendency now day's for pregnancy in advanced age of women. The results of this study showed that advanced maternal age more than 40 years and, younger age less than 19 years are having more adverse pregnancy outcomes as shown in earlier studies: [11,13,15,16–26]. Cleary- Goldman et al. [16] examined the association between advanced maternal age and adverse pregnancy outcome in 36 056 women included in the FASTER multicenter trial and reported a significant association with adverse pregnancy outcome.

Earlier studies, shown that major cause of early trimester abortions is related with chromosomal abnormalities [16]. After 40 years of age pregnant women are at risk of preeclampsia [20].

Increasing age is associated with glucose intolerance due to a reduction in insulin sensitivity

and abnormal lipid profile with increased levels of triglycerides and cholesterol [27,28]. The risk of iatrogenic, but not spontaneous, early preterm delivery increased with maternal age. This is not surprising because the main indications for iatrogenic delivery before 34 weeks' gestation are pre-eclampsia and SGA, both of which increased exponentially with advancing maternal age.

We found that the incidence of GDM increases with maternal age, reaching a plateau at around 40 years, an increase that is consistent with the findings of previous studies [11,16,17,19,22–26] and could be explained by the association between aging and progressive vascular endothelial damage [11,18]. Fulop et al. [27] reported a reduction in insulin sensitivity with age, and in individuals with impaired glucose tolerance, pancreatic  $\beta$ -cell function deteriorates with age [29]. A significant association between advanced maternal age and the risk of stillbirth has been reported previously [8,11]. A systematic review of 29 studies reported an increased rate of Cesarean section among older women in all the individual studies [21]. Proposed causes for the increase in rate of Cesarean section with age include inefficiency of the aging myometrium, decreased number, of oxytocin receptors [16,30–33], increased rates of chronic medical diseases and maternal complications such as preeclampsia and GDM [9] lower clinical threshold for obstetric interventions [30,33] and closer monitoring [33].

## Conclusion

Maternal age plays important role in maternal and fetal outcome in pregnancy. One of the methods to reduce adverse maternal and fetal outcome is by emphasizing on childbearing at appropriate ideal age.

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