

Advanced maternal age and their perinatal outcomes

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ABSTRACT

Background: This review was conducted against a background of increasing maternal age (>35 years) and concerns for fetal and maternal welfare among this group. Consequent to these concerns, increasing trends of birth intervention such as cesarean section and instrumental birth are seen. Although evidence justifies a high rate of intervention among women aged more than 35 years, the evidence for such intervention in women aged 20–34 years is sketchy and often contradictory. **Objective:** The objective of this study was to investigate the risk of adverse perinatal outcomes in women aged ≥ 35 years relatively to those aged 20–34 years. **Place of Study:** This study was conducted at Obstetric Outpatients and Inpatients, Sree Balaji Medical College and Hospital, Chromepet, Chennai. **Study Design:** This was a prospective observational study. **Period of Study:** This study was from August 2016 to February 2018. **Results:** Occurrence of low birth weight babies is increased in women >35 years when compared to pregnant women of the age group of 20–34 years. Other perinatal factors affected were increase in stillbirth, neonatal death, and low Apgar at 5 min in women >35 years of age. **Conclusion:** Although risk and rates of adverse perinatal outcome are increased among women aged more than 35 years, midwives and women should also be aware that perinatal outcomes are generally unfavorable for this group and must have appropriate neonatal intensive care unit facilities. Perinatal morbidity, neonatal death increased with maternal age. There was also an increase in intercurrent illnesses and pregnancy complications with increasing age. There is also some suggestion in literature that social advantage may ameliorate some of the effect of advanced maternal age on perinatal outcome. Further research is required to evaluate the soundness and strength of this association.

KEY WORDS: Elderly gravidae, Low birth weight, Prematurity

INTRODUCTION

For a number of social and medical reasons, such as career-related delays and the possibility of assisted fertilization, an increasing number of women wait until the age of 35 years or greater before motherhood.^[1,2] Therefore, risks to the newborn associated with older age have been a matter of growing interest. However, the effects of advanced maternal age on newborn vitality and weight and on the gestational age are still not well determined, with sometimes conflicting reports.^[3]

Adverse perinatal outcomes can compromise the health and/or development of the newborn. The Apgar score at 5 min, for example, is considered a predictor of neurological health and development of a child,^[4] and the association of low score (<6 of 10 points) with perinatal mortality, cerebral palsy, mental retardation, epilepsy, and low school performance has also been reported.^[4,5]

MATERIALS AND METHODS

This is a prospective observational study and patients (randomly selected) admitted in the labor ward complex or through A.N.O.P were included in the study. After categorizing the patients into, the study Group I includes pregnant women of the age of 20–34 years irrespective of parity and the study Group II involved pregnant women of the age of 35 years and above of any parity. Random sampling was done to reduce selection bias. Informed verbal consent obtained and a detailed history was taken with a common pro forma. Chi-square test was used to test statistical significance. IBM SPSS statistical software version 21 was used for data analysis. $P < 0.05$ was considered statistically significant.

RESULTS

The majority of patients in both groups deliver at term, but there is a definite increase in the incidence of preterm delivery (28%) in Group II when compared to Group I (12%). The incidence of prolonged pregnancy appears to be higher in Group II (12%)

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Table 1: Gestational age at the time of delivery

Period of gestational age	Study Group I		Study Group II	
	Frequency	%	Frequency	%
Preterm	06	12	14	28
Term	42	84	30	60
Postdated	02	04	06	12
Total	50	100	50	100

Table 2: Distribution of birth weight of newborn in the study Groups I and II

Birth weight (in kg)	Study Group I		Study Group II	
	Frequency	%	Frequency	%
<1.5	-	-	1	2
1.5–2.5	4	8	12	24
>2.5	46	92	37	74
Total	50	100	50	100

Table 3: Distribution of perinatal outcome in the study Groups I and II

Perinatal outcome	Study Group I		Study Group II		P value
	Frequency	%	Frequency	%	
Low birth weight	4	8	13	26	0.103
Stillbirth	01	02	02	04	0.569
Neonatal death	00	00	01	02	0.159
Low Apgar (at 5 min)	02	04	07	14	

compared to the study Group II (4%) [Table 1 and Figure 1].

The study Group II shows 24% of babies with low birth weight (LBW) between 1.5 and 2.5 kg and 2% <1.5 kg [Table 2 and Figure 2].

Perinatal outcome is poor in the study Group II with 26% LBW babies, 4% stillbirth, 2% neonatal death, and 14% with low Apgar at 5 min [Table 3 and Figure 3].

DISCUSSION

The majority of patients in both groups deliver at term, but there is a definite increase in the incidence of

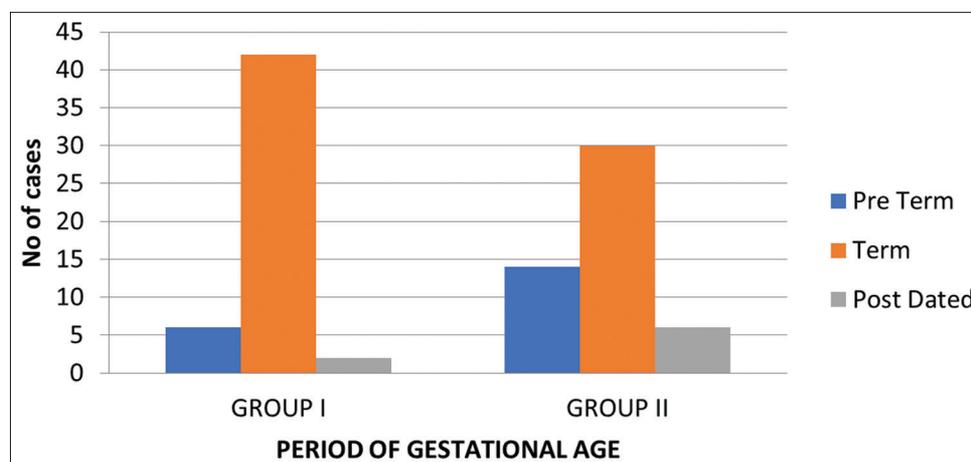


Figure 1: Gestational age at the time of delivery in the study Groups I and II

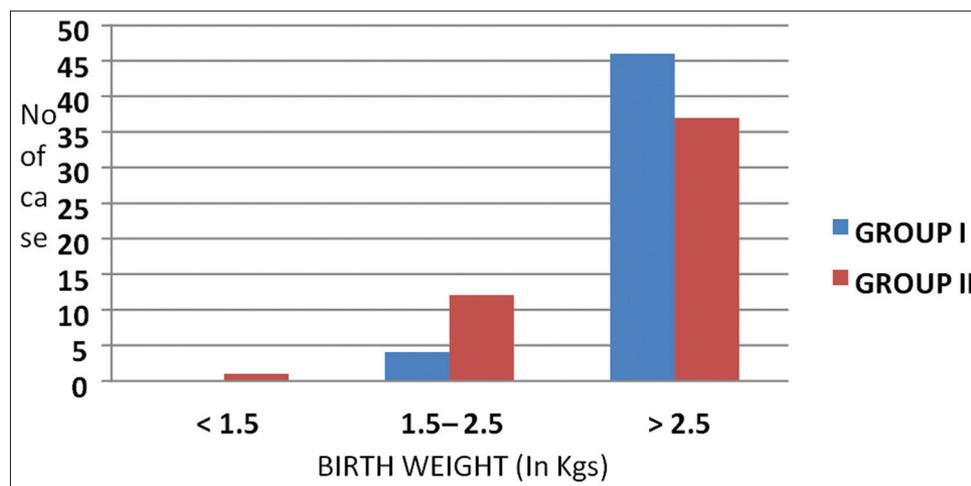


Figure 2: Birth weight of the newborn in the study Groups I and II

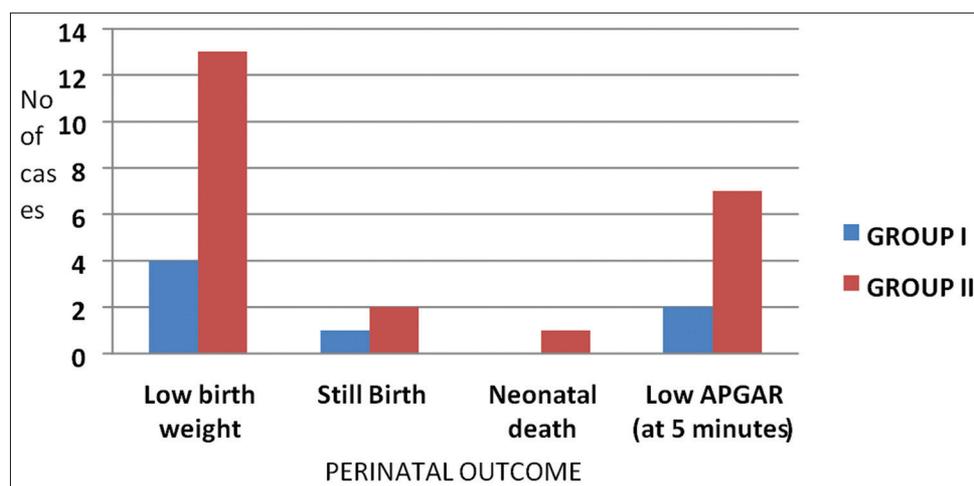


Figure 3: Perinatal outcome in the study Groups I and II

preterm delivery (12%) in Group I when compared to Group II (28%). This correlates with that of the study by Meenakshi *et al.* and Salihu *et al.*^[6,7]. However, the preterm column shown above includes all pregnancies <36 weeks.

The incidence of prolonged pregnancy appears to be higher in Group II (12% vs. 4%). This is probably because most of these are first pregnancies with 44 utmost care from the family members and the patients lead a sedentary lifestyle throughout the pregnancy. $P < 0.058$, hence, was statistically significant.

Adverse perinatal outcome with advancing maternal age has been attributed to a higher rate of antenatal complications seen in this group. Most of the studies have looked at perinatal outcomes in terms of birth weight, neonatal intensive care unit (NICU) admissions, stillbirth, and perinatal mortality age.^[8] About 35% of babies born to mothers aged 35 years and above had a birth weight <2500 g, while in women aged <35 years of age, they were 24%, respectively.

Pawde *et al.* showed 14% of babies born to mothers aged 35 years and above had a birth weight <2500 g, and 12.28% of babies had birth weight <2000 g, while in women aged <35 years of age, they were 18.34 and 7%, respectively. This shows at elderly gravidae had a higher percentage of babies with very LBW, i.e., <2000 g. This may be due to a higher percentage of women with other complications such as pre-eclampsia and intrauterine growth restriction.^[9]

Chan and Lao had observed 4.5% of LBW babies among women aged 40 years and above versus 7.2% among women aged <40 years.^[8] In our study, birth weight has $P=0.103$, which is statistically insignificant.

Sebire *et al.* proved that pregnancy in women of low body mass index is associated with a small increase in

preterm delivery and a small reduction in birth weight, both of undetermined significance.^[10]

Low Apgar at 5 min was 14% in our study Group II when compared to 4% in the study Group I attributed secondary to the passage of meconium. Our hospital being a tertiary center where meticulous and close fetal surveillance are feasible may be one of the reasons why the neonatal outcomes were good even in mothers with high risk for poor perinatal outcome.

Ramachandran *et al.* showed a significant difference in the incidence of low Apgar score (<7 at 5 minutes) secondary to placental abruption and meconium passage.^[11] However, there was no case of perinatal mortality. Joseph *et al.* reported 46% increased incidence of perinatal morbidity and mortality among women aged >35 years.^[12]

The Indian study by Meenakshi *et al.* shows significant difference in low Apgar scores at 5 min but no increase in perinatal mortality. As rightly said by Joseph *et al.*, older women may take encouragement from the fact that the overall perinatal mortality rates are at their lowest worldwide and also a further lowering can be achieved through lifestyle modification measures.^[6]

In our study, perinatal mortality was 8% in the study Group II and 2% in the study Group I. It is 4 times higher in women >35 years. In contrast, Cleary-Goldman *et al.* also reported high perinatal mortality among women aged 40 years and above.^[13] The recent studies clearly state that the perinatal complications are more likely even in women without significant pregnancy complications that affect the fetal outcome.^[11]

CONCLUSION

Women of advanced age, especially those aged 35 years and above, have an elevated risk of adverse outcomes such

as preterm births, LBW, low Apgar scores, and increase in perinatal mortality when compared to women between 20 and 34 years of age. Hence, advancing maternal age definitely has more disadvantages than advantages. If on social or medical grounds, pregnancy above 35 years is unavoidable; then, the adverse outcome is lessened by proper AN care, nutritional supplements, diagnostic imaging, appropriate investigations, and delivery in a tertiary institution with proper NICU facilities. After all, pregnancies above 35 years are definitely a high-risk entity and for her to conceive again, maybe a lot more struggle again.

Let's work together for a successful pregnancy, a healthy mother, a healthy baby, and dream for a wealthy India.

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