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Original research article

A prospective study of pregnancy outcomes in women of advanced maternal age > 35 years at tertiary care centre

[1]Dr. Vanitha Chintapalli, [2]Dr. Guguloth Karuna, [3]Dr. Ramana Bai Ramavath, [4]Dr. Paidi Durga Kumari

[1]Junior Resident, Department of Obstetrics and Gynaecology, Guntur Medical College, Guntur, Andhra Pradesh, India

[2]Associate Professor, Department of Obstetrics and Gynaecology, Guntur Medical College, Guntur, Andhra Pradesh, India

[3]Assistant Professor, Department of Obstetrics and Gynaecology, Guntur Medical College, Guntur, Andhra Pradesh, India

[4] Professor, Department of Obstetrics and Gynaecology, Guntur Medical College, Guntur, Andhra Pradesh, India

Corresponding Author:
Dr. Paidi Durga Kumari

Abstract

Background: Advanced maternal age has been defined as women who are 35 years or older at estimated date of delivery. This age cutoff was selected based on evidence of declining fertility and concern surrounding increasing risks for genetic abnormalities identified in the offspring of pregnant women older than age 35 years.

Our study aim was to determine the risks of pregnancy & to study the adverse pregnancy outcomes in women of advanced maternal age above 35 years.

Our study objective was to know the incidence of pregnant women > 35 years of age, to know the adverse effects and to know the maternal and perinatal outcome.

Methodology: A prospective observational study was conducted at tertiary care centre, Government general hospital, Guntur from January 2024 to June 2024. Convenient sampling was done. All detailed data such as demographic data, maternal age, mode of delivery, obstetrical history, maternal complications and fetal outcome were recorded. Ethical approval was obtained from institutional ethical committee.

Results: The most common maternal complication was pregnancy induced hypertension, pre-eclampsia, oligohydramnios, gestational diabetes mellitus, placenta previa, postpartum haemorrhage. Caesarean section in 39% cases and vaginal delivery in 61% cases.78% were term deliveries, 22% were preterm deliveries. 9 neonates were low birth weight <1.5 kg.

Conclusion: Advanced maternal age is significantly associated with adverse pregnancy outcomes like pregnancy induced hypertension, gestational diabetes mellitus, and preterm delivery. Caesarean delivery was increased in those mothers. Advanced maternal age pregnancy was found to be a major risk factor for low birth weight, perinatal death. Therefore, it is better for health care providers to counsel couples, who seek to have a child in their later ages, about the risks of advanced maternal age pregnancy.

Keywords: Caesarean delivery, pregnancy induced hypertension, gestational diabetes mellitus, oligohydramnios

Introduction

Advanced maternal age has been defined as women who are 35 years or older at estimated date of delivery. This age cutoff was selected based on evidence of declining fertility and concern surrounding increasing risks for genetic abnormalities identified in the offspring of pregnant women older than age 35 years [1].

Pregnant women of advanced maternal age are at risk of complications like miscarriage, hypertension, gestational diabetes, uterine fibroid, placental abruption or previa, tendency of post maturity & IUGR, fetal congenital malformation, preterm delivery, prolonged labour, prematurity, maternal & fetal distress, increased caesarean delivery [2, 3].

This study is most commonly attributed to older primigravida women who delay childbearing by lifestyle choice or due to underlying subfertility, but also includes multiparous women continuing Child bearing [4].

The term advanced maternal age according to Williams obstetrics defined as age 35 years or more for the mother at the time of delivery of her baby. The definition of advanced maternal age varies from study to

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study with most of earlier reports fixing the cutoff points at 35 years and more recent one around 40 years [5].

Our study objective was to know the incidence of pregnant women > 35 years of age, to know the adverse effects and to know the maternal and perinatal outcome.

Materials and Methods

The study was an observational, conducted in tertiary care centre in Department of Obstetrics and Gynaecology in Government General Hospital, Guntur from January 2024 to June 2024.

Study Design

A Prospective observational study was done.

Study Duration

The study period was of six months January 2024 to June 2024.

Study Area

The study was done at tertiary care centre in the department of Obstetrics & Gynaecology at Government general hospital, Guntur.

Study Population

All the pregnant women attending at tertiary care centre in the department of obstetrics & gynaecology at GGH, Guntur with 35 years of age who fulfilled the inclusion criteria.

Sample Size

81 Patients were selected.

Inclusion Criteria

All the pregnant females attending antenatal OPD with age 35 years or more.

Exclusion Criteria

Age less than 35 years.
IVF cases.
Multiple pregnancy.

Methodology

The study was done at our tertiary care centre in the department of obstetrics & gynaecology, on attending ANC-OPD patients at GGH-Guntur, after due permission from the Institutional Ethics Committee and after taking written Informed consent from the patients.

After approval from the Institutional Ethics Committee a valid informed consent was taken. Once the patients were enrolled for the study, a thorough history & physical examination was done as per proforma. An informed consent was taken in written form from patients or patient's attendant. The study was carried out at tertiary care centre in the department of obstetrics & gynaecology at GGH, Guntur on attending ANC-OPD patients on elderly pregnant women with 35 years or more than 35 years of age from January 2024 to June 2024. All the pregnant females coming for the delivery to the hospital with age more than 35 years were included in the study. Maternal age was considered as the age at the time of delivery. Potential confounding factors to the relationship between advancing maternal age & obstetric outcomes include parity, occupation, and history of medical problems, previous adverse pregnancy outcomes were recorded. History of pre-existing medical conditions included pre gestational diabetes, cardiac diseases, chronic hypertension, renal diseases, thyroid diseases and genetic abnormalities [maternal, paternal], history of using medication before conception, such as insulin, cardiac medication, antihypertensives or anti thyroid medication were also obtained. Previous adverse pregnancy outcomes were noted. Patient's reports of prior miscarriage, preterm delivery and fetal/neonatal chromosomal or structural abnormalities were recorded. After 20 weeks of gestations only malformation scan was performed. Patients showing high risk in above screening test were managed according to routine obstetrics protocol. The patients were followed up to the delivery and 4 days post-delivery.

Perinatal outcome was recorded in terms of birth weight, any chromosomal abnormalities, gestational age of delivery, NICU admission.

Maternal outcome was recorded in terms of mode of delivery, obstetric complication and systemic complications.

Results

A hospital based prospective observational study was conducted from January to June 2024. To evaluate the risks involved with advanced maternal age, the obstetric performance with neonatal outcomes of elderly

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gravid as aged 35 years or more.

Table 1: Distribution of patients according to age

Age [years]	N	%
35-39	69	85
> OR =40	12	15
Total	81	100
Mean	37.08	

Majority of the patients were in the age group of 35-39 years. 69 [85%] patients were in the age group of 35-39 years. 12 [15%] patients were in the age group of more than 40 years.

Table 2: Distribution of patients according to BMI

BMI	N	%
Normal [18.5-24.9]	41	51
Overweight [25-29.9]	21	26
Obese [>or=30]	19	23
Total	81	100

41(51%) patients had BMI in the normal range while 21 (26%) and 19 (23%) patients were overweight and obese respectively. The mean BMI of patients was 24.9 kg/m2.

Table 3: Distribution of patients according to gravidia

Gravida	N	%
Primigravida	12	15
Multigravida	69	85
Total	81	100

Majority of the patients were multigravida 69(85%) while 12(15%) patients were primigravida.

Table 4: Distribution of patients according to parity

Parity	N=69	%
P1	25	36
P2	15	22
>P3	29	42

(n=69) Among the multigravida patients, 25(36%) were gravida 2 while 15 (21.7%) and 29 (42%) patients were gravida 3 and >gravida 4 respectively.

Table 5: Distribution of patients according to comorbidity

Comorbidity	N	%
Hypertension	19	23
Diabetes mellitus	10	12
Fibroid	2	2
Heart disease	2	2

19 (23%) and 10 (12%) patients had hypertension and diabetes mellitus respectively while 2 (2%) and 2(2%) patients had uterine fibroid and heart disease respectively.

Table 6: Distribution of patients according to mode of delivery

Mode of delivery	N	%
Caesarean section	36	44
Vaginal induction	30	37
Spontaneous	10	13
instrumental	5	6
Total	81	100

Delivery route was caesarean section in 36 [44%] cases and vaginal was performed in 45[56%] cases. Among vaginal delivery, induction delivery was performed in 30 (37%) patients while spontaneous and instrumental delivery were performed in 10 (13%) and 5 (6%) patients respectively.

Table 7: Distribution of patients according to maternal complications

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Complications	N	%
Pregnancy induced hypertension	12	15
preeclampsia	7	9
Gestational diabetes mellitus	10	12
Antepartum eclmpsia	2	2
Imminent eclampsia	1	1
Malpresentations	3	4
Oligohydramnios	12	12
PPCM	1	1
Placenta previa	3	3
Post-partum haemorrhage	2	2

The most common maternal complication was pregnancy induced hypertension 12(15%) followed by Gestational diabetes mellitus10 (12%), pre-eclampsia 7 (9%), malpresentation 3 (4%), oligohydramnios 12 (14%), placenta previa 3 (4%) and post-partum haemorrhage 2 (2%).

Table 8: Distribution of neonates delivered term/preterm

Term/pre term	N	%
Preterm	26	32
Term	55	68
Total	81	100

Majority of the neonates 55(68%) were term deliveries while 26 (32%) neonates were preterm deliveries.

Table 9: Distribution of neonates according to birth weight

Birth weight	N	%
Less than 1.5 kg	7	9
1.5-2.5 kg	28	35
2.6-2.9 kg	30	37
> 3 kg	16	19

Table 10: Distribution of neonates according to neonatal outcome

Neonatal outcome	N	%
Respiratory distress	12	14
APGAR <7 at 5 min	7	9
Hyperbilirubinemia	9	11
Mortality	4	1
Healthy	48	59

The incidence of respiratory distress and Apgar<7 at 5 mins was observed in 12 [14%] and 7[9%] neonates respectively, while incidence of hyperbilirubinaemia and chromosomal abnormalities was noted in 9[11%] and 1 [1%] neonates respectively. 4 [5%] neonates died while 48 [59%] neonates were healthy.

Discussion

Pregnancy in women 35 years old is associated with a higher maternal and perinatal mortality. The older gravida also has a higher chance of being delivered by caesarean section. Most of the complications associated with advanced age are caused by age related confounders such as type 2 diabetes, hypertension and multiparity. Pregnant women with diabetes or hypertension are at increased risk of adverse pregnancy outcome irrespective of age.

Majority of patients were multigravida, while 12 patients were primigravida. Among the multigravida 25 patients were gravida 2 while 15 & 29 were gravida 3 and >gravida 4 respectively. This is concordant to the studies of Mihretab *et al*. and Londero *et al*. [6, 7].

In our study, 19 and 10 patients had hypertension and diabetes mellitus respectively while 2 patients had fibroid 1 patient had PPCM, respectively. Delivery route was caesarean section in 36 cases and vaginal was performed in 45 cases. Among vaginal delivery, induction delivery was performed in 30 patients while spontaneous and instrumental delivery were performed in 10 patients and 5 patients respectively. Mihret-ab *et al*., Londero *et al*., paliwal *et al*. and kalewad *et al*. noted similar observations in their studies [6-9].

The most common maternal complication in our study was pregnancy induced hypertension followed by gestational diabetes mellitus, pre-eclampsia, malpresentation, oligohydramnios, placenta previa and post-partum haemorrhage. Similar observations were noted in the studies of Mihret-ab *et al*., Londero *et al*., Kahveci *et al*., Kalewad *et al*., Cavazos-Rehg *et al*., Louise *et al*., Schimmel *et al*. [13] and Wang *et al*. [6-14].

Age, parity, mode of delivery, co morbidity.

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Present study	85% in 35-39 yrs,15% in >40 yrs Primi 15%, multi 85% Vaginal 56%, caesarean 44% HTN 23%, DM 12%, Heart disease 2%
Wang *et al*.	86% in 35-39 yrs, 14% in >40 yrs Primi 34%, multi 66% Vaginal 25%, caesarean 75% HTN 8%, DM 6%, Heart disease 1%
Present study	Mode of delivery: vaginal 56%,CS 44% Preterm 32%, term 68%
Kalewad *et al*.	Vaginal 31%, CS 68% Preterm 23%, term 76%

Conclusion

It was observed that multigravida, cesarean section, pregnancy induced hypertension, gestational diabetes mellitus, term/preterm delivery and neonatal birth weight were significant risk factors with advanced maternal age ($p<0.05$).

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