



ORIGINAL ARTICLE

Pregnancy Outcomes in Pregnant Women for the First Time After the Age of Thirty Five Years

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ABSTRACT

Background: The elderly primigravida is defined as a woman who delivered fetus for the first time at the age of 35 years or older. Progressively, this has become more common in our contemporary society and traditionally such pregnancy is regarded as high risk. The aim of this study was to compare the pregnancy outcomes in elderly primigravidae aged 35 years and above with young primigravidae aged < 35 years at time of delivery. **Methods:** This prospective observational study was carried out at Zagazig University, maternity Hospital between 1st January 2017 to 31st December 2017. The sample size was 250 women; they were 120 primigravida women aged 35 years and above at time of delivery (Elderly primigravidae group) and 130 young primigravidae (control group) aged < 35 years at time of delivery who delivered during the same period in the same hospital. **Results:** women aged 35 years and over had a higher prevalence of associated medical disorders as diabetes mellitus, hypertension. The indication for cesarean section was preeclampsia, followed by malpresentation and fetal distress. The most frequent pregnancy complications were preeclampsia, gestational DM and preterm labor. The incidence of low birth weight was higher among neonate borne to older mother. NICU admission increase with elderly primigravida. **Conclusions:** Elderly Primigravida are at an increased risk of pregnancy-induced hypertension/Preeclampsia, gestational diabetes, malpresentation, multiple pregnancy and cesarean section than the younger primigravida, it suggested that the early booking and extra obstetric alterneess shall improve the pregnancy outcomes in this category.

Keywords: Primigravida, Pregnant Women, fetal distress

INTRODUCTION

Elderly primigravida which is defined as age of mother as 35 years or more at the time of delivery has become increasingly common in last two to three decades. This accelerating demographic shift is of major clinical and public health concern, because elderly primigravida has consistently been associated with adverse pregnancy outcomes.^[1]

The age a woman gives birth of her first child is influenced by various socio-economic, religious, and complex cultural variables, which varies from nation to nation

.The first birth is often a significant event in a woman's life and has a relationship to subsequent childbearing and other lifetime events such as education, socio-political status, and poverty. Also, it has implications for the nation's population dynamics, the infant and mother status^[2].

Elderly women are at a high risk of several complications including instrumental deliveries, mal-presentations, malpositions, prolonged labour, increased caesarean section rate, induction of labour, pregnancy induced hypertension, diabetes mellitus, antepartum and post partum haemorrhage. The elderly

primigravida is generally believed to have decreased fertility and increased risk for adverse pregnancy outcomes.^[3]

Reduced fertility with increasing maternal age is evidenced by decline in ovarian oocyte reserve and quality with increasing number of ovulatory cycles poor oocyte quality is associated with an increased risk for aneuploidy, chromosomal abnormalities, and spontaneous abortions in this group of women who are routinely screened for these problems in some countries.^[4]

In recent times, women have changed their life style such as in the pursuit of higher education and entry into work forces and career advancement outside the home. Consequently, this has led to postponement of child bearing, resulting in an increasing maternal age and increase in the rate of divorce followed by remarriage etc. contributes to this upward trend. Traditionally such women are considered to be high risk obstetric patients because of the complications associated with their pregnancies and deliveries.^[5]

However, with the improvement in obstetric care, these risks have continued to be a subject of controversy. Some authors reported that pregnancy and birth outcome are poor, while others reported no difference^[6].

The aim of this study was to compare the pregnancy outcomes in elderly primigravidae aged 35 years and above with those of young primigravidae aged < 35 years at time of delivery

METHODS

This prospective observational study was carried out at Zagazig University, maternity Hospital between 1st January 2017 to 31st December 2017. The study involved primigravida women aged 35years and above at time of delivery (Elderly porimigravidae group) and the younger primigravida women aged below 35 years at time of delivery (control group). The work has been carried out in accordance with Institutional Ethical Committee and scientific committee

The study and control subjects were identified from the hospital antenatal and delivery registries and their case notes retrieved. The estimated sample size was 250

women; they were 120 primigravida women aged 35years and above at time of delivery (Elderly porimigravidae group) and 130 young primigravidae (control group) aged < 35 years at time of delivery who delivered during the same period in the same hospital. The records were chosen by a systemic random sampling technique.

Written informed consent was obtained from all participants. The work has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans.

Inclusion criteria:

- Primigravidae women aged 35 years or older at time of delivery (study group)
- Primigravidae women aged < 35 years at time of delivery (control group).

Exclusion criteria:

- Non pregnant women, multi para women and primigravida women who have major respiratory or heart disease.
- Uterine pathology e.g. fibroid or ovarian cyst.
- Hyperprolactinemia, Hypo or Hyperthyroidism (endocrinological disorder).
- Impaired hepatic or renal function.
- advanced diabetes

Obstetric history:

- Current pregnancy history : LMP, EDD, general health.
- Past gynaecological history
- Past medical and surgical history : diabetes mellitus DM, pregnancy induced hypertension PIH, heart disease ,renal disease.
- Family history: hypertension , diabetes ,chromosomal or congenital malformations.

Post-partum complication: Post-partum hemorrhage, wound infection, failure lactation, maternal death

Examination: Included, general, abdominal and local examination

laboratory investigation : Random blood sugar, Protein in urine, CBC

Ultrasonography examination: It was done on admission to hospital for each case and repeated according to needs.

Neonatal data: The fetal sex, Maturity , The birth weight , Apgar score at 1st minute and

after 5 minute , The presence of congenital mal formation, Neonatal mortality.

The following definitions were used in this study: elderly Primigravida are at age of 35 years or older at the time of delivery, younger Primigravida are those at age < 35 years at the time of delivery. Preterm babies are those born at ≤ 37 weeks of gestation, term babies refers to those born between 37 and 42 weeks gestation. Post-term; those born >42 weeks of gestation., low birth weight those babies who weighed <2.5 kg at birth, normal birth weight those who weighed between 2.5 and 3.9 kg are, macrocosmic babies those who weighed ≥ 4.0 kg at birth. Fetal distress means compromise of fetus during the antepartum period (before labor) or intrapartum period (during the birth process), or if the fetus is not promptly delivered. Prolonged labor a labor lasting more than 18-24 hours.

Data analysis

The data were coded, entered into a personal computer and analyzed using SPSS 20.0 software. Statistical significance was set at p values of < 0.05 levels

RESULTS

Table (1), showed that most of elderly primigravida were in age group 35-40 years (86.7%) with mean 37.9 ± 2.3 . Only (13.3%) of them had very advanced age (>40 Years). **Table (2)**, showed that the occurrence of pregnancy complication were more frequent among elderly primigravida. The incidence of

pre-eclampsia, gestational diabetes mellitus, preterm labor was significantly higher among elderly primigravida. There was no significant difference in percentage of multiple pregnancy, placenta previa, preterm premature rupture of membrane, placental abruption. **Table (3)**, indicated that intrapartum complications were associated with increase maternal age. Fetal distress was more frequent in elderly primigravida. There was no significant difference between both groups as regard prolonged labor or retained placenta. **Table (4)**, showed that caesarean section rate was significantly higher in elderly primigravida. However, the spontaneous vaginal deliveries were the commonest mode among younger Primigravida group. There was no statistically significant difference between elective CS and emergency CS between elderly Primigravida and younger primigravida. **Table (5)**, showed that there was no significant difference for intraoperative complications of cesarean section in both groups according to type of cesarean. **Table (6)**, showed that there were significant difference between Elderly primigravida and younger primigravida as regarding neonatal outcome. **Table (7)** showed there was a statistical significant difference in the incidence of delivery of low birth weight babies between elderly Primigravida and younger Primigravida groups.

Table 1. Age of Both studied Groups

Age(years)	No.	%	Mean \pm SD (Range)
Elderly PG			
>35-40	104	86.7	37.9 ± 2.3 (35-46)
> 40	16	13.3	
Young PG			
<20	24	18.5	27.7 ± 4.9 (18-34)
20 - 25	75	57.7	
>25 -34	31	23.8	

M \pm SD: Mean \pm standard deviation

Table 2. Antepartum complication between studied subjects.

	Elderly		Young		P. Value
	No.	%	No.	%	
Preeclampsia	23	19.2	11	8.2	0.013*
Gestational Diabetes mellitus	15	12.5	7	5.4	0.047*
Preterm labor	13	10.8	5	3.8	0.03*
Multiple pregnancy	4	3.3	3	2.3	0.9
Placenta Previa	5	4.2	2	1.5	0.38
placental abruption	4	3.3	3	2.3	0.9
Preterm premature rupture of membrane	19	15.8	13	10.0	0.16

Table 3. Intrapartum outcome between studied groups.

	Elderly		Young		P. Value
	No.	%	No.	%	
Fetal distress	25	20.8	15	11.5	0.001*
prolonged labor	20	16.7	18	13.8	0.53
Retained Placenta	11	9.2	9	6.9	0.51

Table 4. Mode of delivery in studied groups.

	Elderly		Young		P. Value
	No.	%	No.	%	
Vaginal Delivery	29	23.3	98	75.4	<0.001**
Caesarean Section	91	76.7	32	24.6	
Elective	28	30.8	4	42.9	0.810
Emergency	63	69.2	28	57.1	

Table 5. Post-partum complications

	Elderly		Young		X ²	P. Value
	No.	%	No.	%		
Postpartum hemorrhage	14	11.7	8	6.1	2.36	0.12
Wound Infection	18	15.0	10	7.7	3.35	0.06
Mastitis	8	6.7	5	3.8	1.01	0.3

Table 6. Neonatal outcome between studied groups.

	Elderly		Young		P. Value
	No.	%	No.	%	
Congenital Anomalies	2	1.7	1	0.8	0.55
Fetal Birth injuries	5	4.2	3	2.3	0.63
NICU admission	35	29.2	16	12.3	0.001*
Intrapartum death	1	0.8	0	0.0	0.97

NICU: Neonatal intensive care unit

DISCUSSION

Elderly primigravida is a major factor in the outcome of pregnancy and labor, in both developed and developing countries. Age is considered an important determinant of pregnancy risk, with both upper and lower extremes associated with pregnancy complications and poor outcome. pregnancy is defined as high risk if the pregnancy possibility of an adverse outcome is higher than in the general population. For the upper extreme, this involves pregnancies in elderly primigravida women, frequently defined as an age of 35 years or more at time of delivery^[7].

Regarding antepartum complications, this study showed significant difference between elderly Primigravida and younger Primigravida regarding pre-eclampsia (20.3% versus 7.2%, respectively, p value=0.13), Gestational DM (13% vs 5.4% ,p value=0.047) and preterm labor (11% vs.3.6%, p value= 0.03). The other antepartum complications in this study showed no significant difference between elderly primigravida and younger primigravida regarding to multiple pregnancy (3.7% vs. 1.8 %),placenta previa (7.4% vs.1.8%) , placental abruption (3.7% vs.1.8%) and preterm premature rupture of membranes (16.6 vs. 9.0 %).

In similar study by **Suchita et al**^[8], they recorded twenty one (22.34%) elderly primigravida who developed gestational DM and /or pre- eclampsia during antenatal period compared to six (6.38%) in the younger control group and the difference was statistically significant. They found that DM is showing a rising incidence and is more typical with advanced age. These results were keeping with results from **Benli et al.**,^[7] which also showed significant difference between elderly primigravida and younger primigravida regarding gestational DM (6.5% vs. 3.4%) and preeclampsia (7.8% vs. 2.7%).

Regarding Intrapartum complications, results showed significant difference between elderly primigravida and younger primigravida regarding fetal distress (20.8% vs. 11.5%, respectively, p value 0.001). Where other intrapartum complications (prolonged labor and retained placenta)

showed no significant difference between two groups.

Benli et al.,^[7] found that fetal distress was significantly different between elderly primigravida and younger primigravida (11.7% vs. 5.4% respectively).

Regarding the mode of delivery in this study, caesarean section rate was higher among the study group (77.6 % elderly primigravida and 24.6% younger primigravida, P value <0.001), while normal delivery mode was higher among the control group (22.4% elderly primigravida and 75.4% younger primigravida).

These results are in agreement with results of **Ojule et al**^[9] reported a significant difference between elderly primigravida and younger primigravida where the rate of spontaneous vaginal delivery (1.4% vs. 4.7% respectively) and caesarean section were recorded (58.1% vs. 32.2% P value 0.001).

Results of **Sarwor et al**^[10] showed significant difference in the rate of normal delivery between elderly primigravida and younger primigravida (10.5% vs. 80% respectively) and caesarean section (65.3% vs. 20% respectively).

Babagana Bako et al^[11] found that most of the deliveries were caesarean section among the elderly primigravida 41/49 (83.67%) compared to 3/12 (25.0%) in control group.

In other study by **AL- Turki et al.**,^[12] compared the rate of vaginal delivery in elderly primigravida and younger primigravida (65% vs. 78% respectively), where caesarean section in elderly primigravida was nearly double of younger primigravida (23.8% to 12.6%) and the difference was very significant statistically (p value ,0.001).

Also in similar study by **Gharoro et al**^[13] found that the rate of CS was recorded in (52.13%) of elderly primigravida and (12.76%) of younger primigravida.

Post-partum complications were present in (23.4%) of elderly primigravida, and (17.6%) in younger primigravida, the incidence of post partum hemorrhage in elderly primigravida (11.7%), wound infection (15%) and mastitis (6.7%). In younger primigravida the incidence of post

partum hemorrhage (6.1) , wound infection (7.7%) and mastitis (3.8%).

In a study by **Rachana et al** ^[14], there was no maternal deaths.

Regarding neonatal outcome in elderly primigravida ,93.3% were term 4.2% were preterm and 2.5% were post term ,in younger group 94.6% were term,3. 1% were preterm and 2.3% were post term, there was no statistical difference between the two groups (P value =0.893).

Regarding to estimated birth weight according to the age of primigravida , (88.4%) were normal weight in elderly primigravida, (8.3%) were low birth weight and (3.3%) were \geq 4kg, while (96.6%) of younger primigravida were normal and (3.1%) were \geq kg .There was a highly significant difference between the means weight of two groups P value =0.000.

In similar study by **AL-Turki et al.** ^[12], the mean birth weight of neonates in younger primigravida was (3015,35 gm) whereas the elderly primigravida neonates had lesser weight (2867.11 gm) p value <0.002. The majority of the neonates were in the range of (2000-4000gm) of weight in both the groups. Seventeen neonates (8.2%) in elderly primigravida were very low birth weight and in younger primigravida there were 64 neonates (3.2%). In younger primigravida, moderate low birth weight neonates were 245 (12.5%) and in elderly primigravida were 35(17.5%).

In other study by **Ojule et al.** ^[9], eight (10.8%) of babies delivered to the elderly primigravida were low birth weight babies, while 160 (10.6%) of the babies of the younger primigravida were low birth weight (x=0.15,p=0.7):x=9.9, p=0.002.

Also in another study by **Babagana et al** ^[11], low birth weight was recorded in (20.13%) of elderly primigravida and in (17.09%) of younger primigravida.

Regarding neonatal complications, the NICU admission was more frequent in elderly primigravida (29.2%) than in younger primigravida (12.3%). Only one intrapartum fetal death in elderly primigravid woman with 37 weeks of gestation age with pre-eclampsia .Other findings showed no significant difference with fetal anomalies (1.7% to

0.8%), fetal birth injury (4.2% to 2.3%) and Intrapartum death (0.8% to 0.0%)

These results were keeping with results obtained from **AL-Turki et al** , ^[12], there were 63 (3.2%) fetal deaths in younger primigravida ,and in elderly primigravida the fetal deaths were 11(5.3%) In similar study by **Gulmezoglu et al** ^[15], it was found that no significant difference between the two groups regarding fetal injury and fetal anomalies.

CONCLUSIONS

Elderly Primigravida are at an increased risk of pregnancy-induced hypertension/Preeclampsia, gestational diabetes, malpresentation, multiple pregnancy and cesarean section than the younger primigravida, it suggested that the early booking and extra obstetric alterneess shall improve the pregnancy outcomes in this catogery .

Conflict of Interest: Nothing to declare.

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