

## Pregnancy Outcome in Women Aged Forty Years Old

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**Abstract:** The changing life pattern for women in our current society includes education. Entering work force and developing a career outside of the home accompanying this, is often a postponement of childbearing. Furthermore, failure of proper contraceptive practice among elderly women may result in an unplanned pregnancy at an older age. Age was considered for many years a reproductive risk factor on both mother and child. The aim of this study is to predict the influence of maternal age on the pregnancy outcome, and if there are more complications either fetal or maternal associated with pregnancy in the fifth decade of life. This is a cross-sectional study which will be conducted at EL-Galaa Maternity Teaching Hospital Cairo, Egypt. About 23.92% of the studied women were complicated by hypertensive disorders of antepartum hemorrhage was 34% in elderly study group. For women aged 40 years or older, pregnancy carries a higher maternal as well as fetal and neonatal risks. The high rate abdominal deliveries may increase the risk of maternal mortality and morbidity at that age group.

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**Keywords:** High risk pregnancy, women aged forty, aged less than 40, hypertensive disorder, gestational diabetes, Down syndrome, molar pregnancy

### 1. Introduction

The changing life pattern for women in our current society includes education. Entering work force and developing a career outside of the home accompanying this is often a postponement of childbearing. Furthermore, failure of proper contraceptive practice among elderly women may result in an unplanned pregnancy at an older age. Although age was considered for many years a reproductive risk factor on both mother and child. Its direct effect on pregnancy outcome remains an unresolved issue. Previous reports have arrived at discordant conclusions, perhaps because advanced maternal age is associated with many other variables in patient characteristics (McCoy L 2008).

The older patients vary with respect to parity and the presence or absence of underlying medical disorders. As people age there is an increase in systemic disease such as hypertension and diabetes. If a pregnant woman has these problems, then she should be considered to be a high risk. Of course, that is true, whether she is 25 or 35 years old, these diseases alone put in the high risk category without consideration of age. More older women have these problems, therefore more older women are going to be at high risk. In that since older women as a category age at higher risk than younger women (Coshner et al., 2000).

What about the women 35 years and older who don't have these medical problems. As they are at high risk because of age alone?

In a study they found that the healthy gravid women (both parous and multiparous) did not demonstrate an increase in the development of pregnancy complications. These include preterm labor, post-datism, preterm rupture of membranes, meconium stained liquor, third trimester bleeding, hydramnios, and problems with weight gain or urinary tracts infections.

It seems possible that deliberate alterations in the pattern and content of obstetric care, which takes into account these specific complications could have a favorable impact on the maternal and fetal outcome (Lehmann and Chism 2008).

### 2. Subjects and Methods

This is a cross-sectional study which will be conducted at EL-Galaa Maternity Teaching Hospital Cairo, Egypt.

Patient Selection: The study compressed:

1 - The study group:

Considered of 100 pregnant women aged 40 years or older. They were collected by simple random sample every Sunday. All of the patients will be admitted to the emergency department.

2- The control group:

Consisted of 100 pregnant 20 -30 years admitted to the emergency department.

All this cases of study were subjected for the followings:

#### I. **History and Examination:**

A. History: Full personal, present, past, family, menstrual obstetric and contraceptive history were taken.

B. Examination: Included general, abdominal and local.

#### **Examination.**

#### II. **Laboratory Investigation:**

- Random blood sugar.
- urine analysis, Protein in urine.
- Complete blood count, (CBC).

#### **Ultrasonographic examination**

Early ultrasound scan for Nuchal Translucency (Down syndrome), midtrimester ultrasound scan for congenital anomalies.

#### **The work-up for each patient:**

**A** - For pregnancy wastage if any:

- Abortion type and mode termination.
- Vesicular mole mode of termination.
- Ectopic pregnancy.
- Intra uterine foetal death.

**B** - For labour:

- Partogram.
- Duration of pregnancy (pre -term, full term or post date).
- Mode of delivery (normal vaginal delivery, instrumental or caesarean section).

**C** - For the delivered neonate:

He / She examined for.

- The fetal sex.
- The birth weight.
- APGAR score at one and five minutes.
- The presence of congenital malformations.

#### **3. Results:**

The results are shown in the following tables.

Blood Pressure	Study Group $\geq 40$ years]	Control Group [20-30 years]	t-test	p-value
<b>Systolic</b> Mean $\pm$ SD Range	150.40 $\pm$ 23.92 130-180	118.40 $\pm$ 16.98 100-160	10.909	<0.001
<b>Diastolic</b> Mean $\pm$ SD Range	105.40 $\pm$ 13.56 90-120	78.00 $\pm$ 11.10 60-110	15.463	<0.001

RBS	Study Group $\geq 40$ years]	Control Group [20-30 years]	t-test	p-value
Mean $\pm$ SD	200.84 $\pm$ 65.61	103.12 $\pm$ 83.36	9.201	<0.001
Range	65-700	25-320		

Albumin in urine	Study Group $\geq 40$ years]		Control Group [20-30 years]		Chi-square test	
	No.	%	No.	%	x2	p-value
+1	16	16.0%	9	9.0%	12.913	<0.001
+2	20	20.0%	8	8.0%		
+3	16	16.0%	5	5.0%		
Nil	48	48.0%	78	78.0%		
Total	100	100.0%	100	100.0%		

Early complications	Study Group $\geq 40$ years]		Control Group [20-30 years]		Chi-square test	
	No.	%	No.	%	x2	p-value
Downs	13	13.0%	1	1.0%	10.727	<0.001
Hyperemesis	1	1.0%	0	0.0%	0.505	0.477
VM	7	11.0%	2	2.0%	5.265	0.022

Late complications	Study Group [≥40 years]		Control Group [20-30 years]		Chi-square test	
	No.	%	No.	%	x <sup>2</sup>	p-value
Placental abruption	41	41.0%	23	23.0%	6.641	<0.001
Increase resistance umbilical of artery Doppler study	8	8.0%	0	0.0%	5.381	0.012
IUFD	6	6.0%	0	0.0%	4.296	0.038
IUGR	9	9.0%	0	0.0%	7.446	0.006
LBW	13	13.0%	0	0.0%	11.847	<0.001
Oligohydramnios	7	7.0%	0	0.0%	5.329	0.021
Postterm	8	8.0%	23	23.0%	7.482	0.006
Preterm	33	33.0%	19	19.0%	4.392	0.036

Mode of termination	Study Group [≥40 years]		Control Group [20-30 years]		Chi-square test	
	No.	%	No.	%	x <sup>2</sup>	p-value
Curettage	15	15.0%	4	4.0%	5.816	0.016
MVA	7	7.0%	0	0.0%	5.329	0.021
Spontaneous	8	8.0%	0	0.0%	6.380	0.012

	Study Group [≥40 years]		Control Group [20-30 years]		Chi-square test	
	No.	%	No.	%	x <sup>2</sup>	p-value
Placental abruption	24	24%	13	13%	8.683	0.022
Placenta previa	10	10%	2	2%		

Mode of delivery	Study Group [≥40 years]		Control Group [20-30 years]		Chi-square test	
	No.	%	No.	%	x <sup>2</sup>	p-value
CS	36	36.0%	21	21.0%	4.809	0.028
NVD	64	64.0%	79	79.0%		

PPHGE	Study Group [≥40 years]		Control Group [20-30 years]		Chi-square test	
	No.	%	No.	%	x <sup>2</sup>	p-value
Mild	26	26.0%	12	12.0%	5.491	0.019
Moderate	13	13.0%	0	0.0%	11.847	0.006
Severe	4	4.0%	2	2.0%	0.172	0.678

	Study Group [≥40 years]		Control Group [20-30 years]		Chi-square test	
	No.	%	No.	%	x <sup>2</sup>	p-value
Respiratory distress	25	25.0%	1	1.0%	21.282	<0.001
No Respiratory distress	68	68.0%	86	86.0%	8.159	0.004

#### 4. Discussion

There have been several reports in adolescents, but few published reports regarding pregnancy late in reproductive life. Furthermore most of the published studies have concentrated on special aspects such as elderly primigravida or grand multipara. There is relatively little information about reproductive performance and risks in older women as a group (Martin 2012). The incidence of pregnancy over 40 years is not uncommon. The reason is not the increasing rate of fertility at that age, but is due to the postponement of child bearing till that age. At the age

40 years some females feel that time is running out so, there is an intense desire to have a child (Cunningham 1995). Also, some females may believe that by having a child late in life, she will be revitalized by participating in an experience usually reversed for the young. Most females are minded that the age of forty is the age of closing off the gates (Huang 2008). It is non-disputable that there are psychological advantages to postponed parenthood. As individuals who have had an opportunity to taste a number of life's experiences, and had the time to come to grips with their own identities, older parents are

often better equipped to rear children than younger ones. Since frequently older parents feel better about themselves, and are more tolerant, they have a better acceptance of child as an individual, and have a greater willingness to allow the child to develop in his or her own style. On the other hand, it should be noted that postponing child bearing often deprives children of the joyous relationship between grand parents and grand children. Also, one thing that has not changed much over time is the social dictum that it is abnormal to have no children. The motherhood myth suggests that since most women are biologically equipped to bear children they must be interested in rearing them. So, all couples, even with advancing age, are not wanting to differ from the norm. Also, baby's shock is particularly severe for first time older parents as the baby is demanding, schedule disrupting, carefully established patterns of work and love (Havez2006).

It is well known that a women's reproductive life spans the years from her early teens to her late forties. The most successful time for conception itself is probably the late teens or early twenties.

It is interesting to note that when no contraception is used and a women has sexual intercourse on regular basis, 86 percent of women aged 20-40 years will become pregnant in one year, while at the ages 35-39 years, because of an increased likelihood of reproductive tract disorders and irregular ovulation, only 52 percent will conceive in one year. Also, many of the risks of late motherhood may not be related to age per se, but to pre-existing medical disorder or inadequate nutrition (Cunningham 2015). In this study, maternal complications in elderly parturient women above 40 years were significantly increased. As regard hypertension 23.92% of parturient women  $\geq$  40 years had systolic blood pressure  $\geq$  90 mmhg compared to 13.56% in the younger control group. Table (1) which show a significant difference statistically. It is clear that blood pressure increase with advanced age which may be partly explained by the vascular changes that accompany aging process. In our study group, 20% had mild pre-eclampsia, while 16% had severe pre-eclampsia. Schuit G. et al (2002) related their relatively higher rate (15.8%) of preeclampsia, compared to 19% of the total population to the pre-existing medical disease in their elderly patients. the incidence of preeclampsia in medically complicated cases were (24%) while in uncomplicated subjects, it was (12.7%), which is not different from that of total population (10%). Am J perinatol 2008 (2008) reported that the rate of hypertension among elderly parturient women was near to our results (31%). hypertension was the most common antepartum complication that occurred in the patients  $\geq$  40years. In this study the incidence of antepartum hemorrhage

among elderly parturient women (study group ) was significantly high (34%) when compared to the control group (15%) in (10%) of this cases it was accompanied with placenta previa while only in (24%) it was due to accidental hemorrhage (table 7). It is evident that age is the most contributing factor. the result of the study coincides with what was written by William (2014), that high degree of suspicion of diagnosing placenta previa should accompany cases of bleeding associated increased age of the mother. On the other hand, Callaway (2005) had not found our increase in placenta previa incidence in patients  $\geq$ 40 years but their reported incidence was (0.3% ) similar to their obstetric population. Similar to our results, Cleary –Goldman (2005) reported a higher rate of antepartum hemorrhage among elderly parturient subjects. found that the increase was mainly due to placenta previa.

Also Callaway (2005) reported an incidence of (2.4%) of placenta previa in elderly parturients compared to (0.6%) in patients aged 20-30 years, they suggested that parity is the main contributing factor.

Reeta Lampinen (2009) recorded 0.8% incidence of placenta previa and 4.6% incidence abruptio-placenta among women  $\geq$  40 years, they attributed this increase to age. Its clear that previous abortion significantly increases with advanced maternal age as shown in table (5 ). the high abortion rate with elderly women may be the result of chromosomal alterations with subsequent increase in congenital anomalies incompatible with life (kanungo et. al 2011). Also, the high abortion rate may be the result of high rate of luteal phase defect along with advancing maternal age. Regarding the mode of delivery, in our study, caesarean section rate in parturient women aged 40 years or older was significantly high (36%) compared to that in the control group (21%) as shown in table (8) Kirby. Rs (2003), reported a caesarean section rate 25.7% for parturient  $\geq$ 40 years while the rate for total population, including patients over forty, was, was (19%). A similar caesarean section rate (29.4%) was reported by Hayles and Parisaei (2014). Similar to our incidence rate, Karlstorm (2013) reported a caesarean section rate of (31%) among aged 40 years and over. the high the high caesarean section rate in tier study was attributed to the centralization of both antenatal care and delivery of high risk at Sweden hospital where their study was carried out. Also, El-Galaa Maternity teaching Hospital is considered a central referral hospital where many high risk parturients women are delivered.

In our study the incidence of premature deliveries among elderly parturient women 33% were higher than that of the younger control group (19%) table (5). Kanungo et al (2011) found that prematurity

among women above 40 years was (28%) compared to (9%) in the total population. prematurity was increased in complicated parturients compared to uncomplicated (24% and 15.7%) respectively. however, premature deliveries among parturients with low parity was only (9%) i.e almost equal to control group. On the other hand, **Lisonkova (2014)**, noted that there was no increase of prematurity in older women except in presence of complications. Prematurity rate was (5.3%) in parous women with complications compared to (3.8%) in healthy parous women. Regarding post-date deliveries, our elderly parturient women had a lower rate (8%) compared to the younger control group (23%) (Table 5). Its observed in all previous studies that gravidas with advanced age usually deliver either preterm due to complications or around term **Abyholm et al (2011)**. It should be noted that (**Reeta lampinen 2009**) reported that aging of maternal vascular system may predispose to placental insufficiency, consequently the risks of post-date pregnancy in the older pregnant women are magnified compared to younger subjects. In their study, women > 35 years of age were less able to deliver post-date infants with optimal outcomes compared to younger women, thus intrapartum fetal monitoring is essential for older parturients. they thus, confirmed that fetuses of women >35 years of age do not tolerate labor as compared to fetuses of younger women. so, it is wise to deliver elderly pregnant women close to term especially if she is primigravida. On the other hand, **Vsta IM (2008)** reported that when blood pressure was controlled, there were no increase in birth weight among elderly compared to younger women. **Carolan M (2004)** had found small increase in low birth weight babies with advancing age of the mother and related to increasing blood pressure. Also, **Stakes (2008)** noted that babies weighting less 2.5 kgm were more prevalent among women 40 years or older. However, **Joseph KS (2005)** recorded no significant increase of low birth weight babies with advancing maternal age especially in primigravida. In many reports congenital malformation were significantly increased in the neonates born to elderly mothers (**Jolly M 2000**). However, in our study we have just found two case of anencephaly in the elderly group and Down's syndrome babies were 13 cases in study group compared to one case in control group. Diabetes mellitus also apparently increased in study group as there were 25% compared to 12% in control group table (2). The same results was occurred in **Reeta Lampinen (2009)**. On the other hand **Joseph KS (2005)** noted that no big difference between control and study group in incidence of diabetes mellitus, the results were 12% & 10% in control and study groups respectively. In our study the incidence of postpartum hemorrhage table (9) markedly

increased in the study group as regard the incidence of mild postpartum hemorrhage 26% compared 12% in control group, moderate postpartum hemorrhage 13% compared to no cases in control group, severe postpartum hemorrhage 4% compared to control group. In the study of **Reeta lampinen (2009)** the incidence of postpartum hemorrhage in women over 40 years was 24% and 12 % in control group under 30 years. On the other hand **Abyholm et al (2011)** reveal the incidence of postpartum hemorrhage in elder gravida was the same for younger gravida as the incidence obstetric postpartum hemorrhage.

In our study group the number of cases of intrauterine growth retardation was higher than that of control group, 9 cases and no case, in study and control group respectively. In the study of **Reeta Lampinen (2009)** revealed that 7 cases for intrauterine growth retardation in elder gravida and one case in younger gravida. On the other hand **McMillan D et al (2011)** revealed that the incidence of intrauterine growth retardation in elder gravida and younger gravida after exclusion of hypertensive disorders with no big difference as that for general incidence in pregnant women. In our study the number of cases for intrauterine fetal death was 9 cases compared to no case in control group. It may be explained by increased the incidence of hypertensive disorders and antepartum hemorrhage in women over 40 years. A similar result was occurred in the study of **Reeta Lampinen (2009)** about 10 % for intrauterine fetal death in elder gravida compared to less than 1% in younger gravida. On the other hand **Vsta IM (2008)** revealed that after exclusion of hypertensive disorders, diabetes mellitus and antepartum hemorrhage the incidence were 9% in pregnant women over 40 years old and 8% in younger pregnant women. In our study the incidence of neonatal respiratory distress was 25% in study group compared to 1% in control group. It may be explained by increase the incidence of diabetes mellitus and prematurity in women over 40 years. In the study of **Reeta lampinen (2009)** neonatal respiratory distress was higher in the women pregnant over 40 years as compared to younger pregnant women 18% and 3% in study and control groups respectively. On the other hand **McMillan D et al (2011)** neonatal respiratory distress in elder pregnant women over 40 years after exclusion of diabetes mellitus and prematurity was near the same for younger pregnant women 13% and 11% in study and control group respectively.

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