

Pregnancy Outcome Comparison in Elderly and Non Elderly Primigravida attending at Mahila Chikitsalay, Jaipur (Rajasthan) India

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Abstract— *Pregnancy and child birth are normal physiological processes and outcomes of most of the pregnancies are good but sometimes because of some reasons it has bad outcomes; out of that one is supposed to be elderly primi. But nowadays it becomes essential to delay the pregnancy in changing social and economic trend. Simultaneously higher advanced technique and better supported maternal and neonatal care also exist. So to have an idea of balance between these this case-control study was done on 120 elderly and 120 non-elderly primigravida to compare the pregnancy outcomes. To find out the association Chi-Square and Unpaired 't' test was used. It was observed in this study that although there was no significant difference in antenatal maternal pregnancy outcomes but PPH, induction of labor, cervix dystocia were significantly more in elderly. Likewise time taken to start with breast feeding was also more in elderly. In case of newborn mean APGAR score and mean birth weight was significantly lesser in elderly than non-elderly.*

Keywords— *Elderly Primigravida, pregnancy outcomes, PPH, PROM, LSCS*

1. Introduction

Pregnancy is the only time in a women's life when she can help God's work a miracle. Mothers and children are the vulnerable group in any population. In India women of child bearing age constitute 19%. The health of the mother lays strong foundation to the health of the nation in general.¹ Pregnancy and child birth are normal physiological processes and outcomes of most of the pregnancies are good. Data suggest that around 40% of all women develop some complication. One such risk factor is elderly pregnancy that leads to many complications during pregnancy, labor and also for the baby.²

Now a day's women because of their career and other problems delay pregnancy. Elderly women are at high risk of complication including instrumental deliveries, mal-presentations, mal-positions, prolonged labor, caesarean section rate, induction of labor, pregnancy induced hypertension, diabetes mellitus, ante and post partum haemorrhage.³

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.⁴

But some studies had reported that with the better available modern medical facilities these elderly primigravida and their adverse pregnancy outcomes can be managed with proper monitoring.^{5,6,7}

Nowadays prevalence of elderly women is increasing with changing trend of life expectancy, economic growth and social changes. So pregnancy outcomes of elderly should be assessed so as to make a balance between pregnancy outcome variability and socially & economically established elderly primigravida. The purpose of the present study is to study the pregnancy outcome in elderly primigravida and to compare it with that of the young primigravida.

2. Methodology

A hospital based case-control analytic type of observational study was carried out in year 2013 at Mahila Chikitsalya, Jaipur. As sample size was calculated 102 subject for each group at α error 0.05 and power 80% expecting proportion of LSCS in elderly and non elderly group 26.2% and 10% respectively (as per seed article). So for the study purpose 120 eligible elderly primigravida and 120 eligible non-elderly primigravida was taken with contingency addition of 15%. So for the study purpose 120 singleton non anemic healthy primigravida aged 35 years or more was taken as study group and for control group singleton non anemic healthy primigravida aged less than 35 years matched for every eligible elderly pregnant woman of study group women in maternal education, occupation, socio-economic status and body mass index.

These women who came for delivery were interrogated and followed till their postpartum period to find out antenatal (ANC), Intra-natal (INC) and Postnatal complications (PNC) in both the groups. Observations were entered in a pre-designed schedule. These observations were inferred with the use of Chi-square and Unpaired 't' test. Risk of complications was assessed by Odd's Ratio (OR)

3. Results

Normal vaginal delivery was present in significantly lower number of elderly than non-elderly women i.e. 8.33% and 10.83 % respectively. When other modes of delivery were concerned it was found that LSCS was done in 2.4 times more in elderly than non-elderly which was statistically significant. Likewise assisted instrumental delivery was done in 8.5 times more in elderly than non-elderly which was also found statistically significant. (Figure 1)

Fig. 1

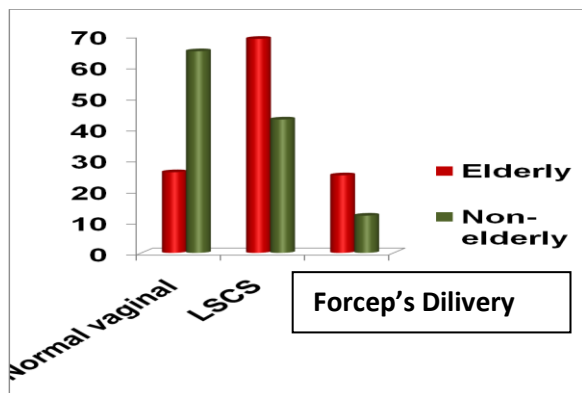
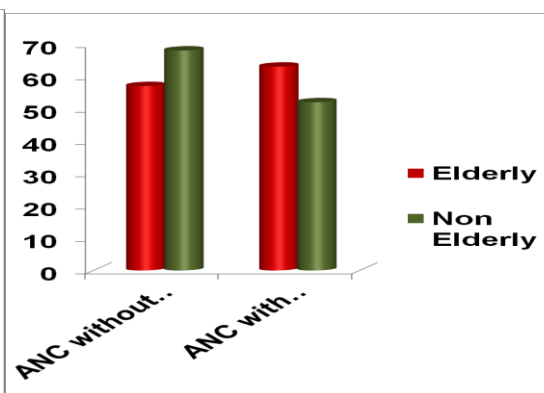


Fig. 2



When maternal pregnancy outcomes were compared in the present study it was found that difference of women had APH, PIH and PROM were not having significant difference in both the groups i.e. elderly and non-elderly. But induction of labor was induced in 2.7 times more number of elderly than non-elderly women and it was found significant. Likewise cervix dystocia was found in 8.5 times more number of elderly than non-elderly women and it was also found significant. (Figure 1 & Table 1)

It is also observed that although breast engorgement was found more in elderly women than non-elderly but it was not found significant. But Post-partum hemorrhage (PPH) was present in 2.4 times more in elderly than non-elderly women which was found significant. (Table 1)

It was also observed in this study that vertex presentation of fetus was present in significantly lesser number of elderly than non-elderly women i.e. 79.17% v/s 91.67% respectively. When other presentations were concerned it was found that breach was 2.6 times more present in elderly than non-elderly which were statistically significant (OR=2.608 and p=0.024). (Table 1)

Table 1

Comparison of Maternal Complications in Elderly and Non elderly Primigravida

Maternal Complications	Elderly% /Nonelderly %	OR	P Value	LS
Ante-natal				
APH	8.33/10.83	0.774	0.661	S
PIH	50/48.33	1.069	0.897	S
PROM	11.67/8.33	1.453	0.519	S
Intra-natal				
Induction	21.66/9.17	2.741	0.041	S
Cervix Dystocia	6.64/0.83	8.5	<0.001	S
Obstructed Labor	4.15/0.83	5.174	0.215	S
Post-natal				
PPH	36.67/19.17	2.442	0.004	S
Breast Engorgement	39.17/30	1.502	0.175	S
Fowl Smelling Lochia, Fever and Maternal Death reported Zero				

In the present study it was also found that although obstructed labor was present in 5.2 times more in elderly than non-elderly but it was not found statistically significant. But Oligo-hydramnios was present in 8.5 times more in elderly than non-elderly which was found statistically significant. Intrauterine growth retardation (IUGR) was also found to be associated with age of mother. (Table 2)

Table 2

Comparison of Fetal Complications in Elderly and Non elderly Primigravida

Fetal Complications	Elderly% /Nonelderly %	OR	P Value	LS
Breach Presentation	19.17/8.33	2.602	0.024	S
Oblique Presentation	1.67/0	NC	NC	NC
Fetal Distress	1.67/0	NC	NC	NC
Oligohydramnios	6.64/0.83	8.5	0.041	S
IUGR, IUD and Still births reported Zero in both the groups				

When newborn pregnancy outcomes were compared in the present study it was found that difference in APGAR score of newborns of elderly women was significantly lower than those women of non-elderly group. Likewise mean birth weight was also was significantly lower in newborns of elderly women than that of non-elderly. And mean time lag in starting breast feeding in elderly women was significantly higher than in non-elderly women. (Table 3)

Table 3

Comparison of Newborn Parameters in Elderly and Non elderly Primigravida

Newborn Parameters	Mean±SD Elderly /Nonelderly	Unpaired 't' Test at 118 DF	P Value	LS
APGAR Score	7±0.28/8.58±0.55	-16.152	<0.001	S
Birth Weight	2.6±0.5/2.8±0.8	-2.302	0.021	S
Time Lag in Breast Feeding	10±2/7.2±3	8.507	<0.001	S

It was also found that Cleft lip and Polydactyl was the congenital anomalies found out in elderly but it was not found significant. So it can be depicted that congenital anomalies of newborn were not associated with age of pregnant women (Table 4)

Table 4

Comparison of Neonatal Complications in Elderly and Non elderly Primigravida

Neonatal Complications	Elderly% /Nonelderly %	OR	P Value	LS
Cleft Lip	2.5/1.67	1.513	0.991	NS
Polyductyl	1.67/0	NC	NC	NC

4. Discussion:

This present study shows that ante-partum hemorrhage was observed more in non-elderly than elderly i.e. 10.83% and 8.33% respectively however this variation in proportions was not found significant ($P=0.661$). Well comparable observations were made by other authors like Amarin VN et al (2001)⁸ and Ziadeh SM et al (2002)⁹ they all also found that elderly women had significantly more ante-partum hemorrhage than non-elderly. As present study observed no significant difference in proportion of ANCs having APH in elderly and non-elderly this may be because of that older women, were more cared by their own and managed by modern obstetric methods that are available in this hospital where this study was conducted. This explanation is also supported by other authors.^{8,9}

This present study shows that pregnancy induced hypertension was slightly in higher proportion in elderly than non-elderly but this variation in proportions was also not found significant ($OR=1.069$ with $p=0.897$). Many author like Naqvi MM et al (2004)¹⁰, Shivalingam N et al (1989)¹¹, Achanna S et al (1995)¹², Amarin VN et al (2001)⁸ and Ziadeh SM et al (2002)⁴ reported significantly higher proportion of PIH in elderly primigravida than non-elderly. Findings of the present study also shows more PIH in elderly than non-elderly primigravida although it was not found significant may be because of better cared ANCs in a esteemed hospital of capital of state. This fact is further supported by Anate M and Akeredolu O (1996)¹³

This present study shows that pre-mature rupture of membrane (PROM) was slightly higher in proportion in elderly than non-elderly primigravida but this variation in proportions was also not found significant ($OR=1.453$ with $p=0.519$). Other authors also reported well comparable findings with this study like Ziadeh SM et al (2002)⁹

This present study observed that cervix dystocia was found 8.5 times more in elderly than non-elderly women and it was also found significant ($OR=8.5$ with $p=0.041$). Similar observations were

made by other authors like Allahbadia et al (1994)¹⁴ who also found that duration of labor was more in elderly primigravidae that may be because of undetected cervix dystocia. Sivalingam N et al (1989)¹¹ also found that pregnancy-induced hypertension was the commonest antenatal complication, and together with prolonged labor, the commoner indications for abdominal delivery. This prolonged labor may be because of cervix dystocia.

This present study shows that labor was induced in 2.7 times more in elderly than non-elderly women and it was found significant (OR=2.608 with $p=0.012$). Similarly Allahbadia et al (1994)¹⁴ also found that duration of labor was more in elderly primigravidae. Similar observations were made by Jahan MK et al (2009)¹⁵ who also reported delayed labor with induction of labor in elderly than non-elderly primigravida. In these studies including present study induction of labor was done in significantly more in elderly primigravida than non-elderly may be because of the fact that cervix dystopia was also significantly more in elderly primigravida than non-elderly. This explanation is also supported by other authors like Bachhav AA et al (2014)¹⁶ and Bhagat M et al (2014)¹⁷

This present study shows that vertex presentation was present in significantly lower ($p=0.010$) number of elderly than non-elderly women (i.e. 79.17% v/s 91.67%). When other presentations were concerned it was found that breech was 2.6 times more present in elderly than non-elderly which was statistically significant (OR=2.608 and $p=0.024$). Likewise oblique was present in 2 elderly women whereas none in non-elderly and it was not found significant ($p=0.478$). Other authors also had reported the almost similar findings like Allahbadia G et al (1994)¹⁴, Achanna S and Monga D (1995)¹² and Naqvi MM and Naseem A (2004)¹⁰. Jahan MK et al (2009)¹⁵ found increased incidence of malpresentation, was found significantly high ($p<0.001$) in case group (80%) compared to control group (51%).

This present study shows that normal vaginal delivery was present in significantly lower ($p<0.001$) number of elderly than non-elderly women (i.e. 21.67% v/s 54.17%). When other modes of delivery were concerned it was found that LSCS and assisted instrumental delivery was done in 2.4 times and 8.5 times more respectively in elderly than non-elderly which was statistically significant (OR=2.423 with $p=0.001$). Similarly Naqvi MM et al (2004)¹⁰ reported that 30.76% of elderly group were delivered by caesarean section as compared to 16.02% in young group ($p\text{-value} < 0.05$). Jahan MK et al (2009)¹⁵ also observed that the rate of caesarian section was also more among the cases (older women). Achanna S et al (1995)¹² found an increased incidence of breech presentation (6.78% vs. 3.33%) and Caesarean sections (74.6% vs. 10%) among the study group.

This present study shows that post-partum hemorrhage (PPH) was present in 2.4 times more in elderly than non-elderly women which was found significant (OR=2.442 with $p=0.004$). Similar findings were reported by Anate and Akeredolu O (1996)¹³. This present study shows that none of the women of any of two groups had maternal death or signs of sepsis i.e. foul smelling lochia or fever. Similar to present study there were no maternal deaths was observed by Sivalingam N et al (1989).¹¹

This present study shows that Intrauterine growth retardation (IUGR) and intrauterine growth was found in one and none respectively of the women from each of the two groups so it was also not found significant ($p=0.478$). But Callaway LK et al (2005)¹⁸ also observed that 10% of neonates were small for gestational age, and 8% were large for gestational age. Seventeen percent required admission to the special care nursery and 6% had congenital abnormalities. Observations regarding IUGR of the present study may be explained because of better ANC care at this apex hospital along with more careful attitude of elderly women.

This present study shows that mean birth weight was also significantly ($P=0.021$) lower in newborns of elderly women than that women of non-elderly ($2.6\pm0.5\text{Kg}$ v/s $2.8\pm0.8\text{Kg}$). Almost similar observations were made by other authors like Jahromi BN and Hussein Z (2008)¹⁹ This present study shows that mean APGAR score of newborns of elderly women was significantly ($P<0.001$) lower than

that women of non-elderly group (7.67 ± 0.28 v/s 8.58 ± 0.55 in elderly and non-elderly respectively). Although Jahromi BN and Hussein Z (2008)¹⁹ who found proportions of newborn having 5-minute Apgar scores < 7 were significantly higher in the older group ($p < 0.05$) of women than non-elderly.

This present study shows that although congenital anomalies were present in five newborns of elderly women whereas in two newborns of non-elderly women which was not found significant ($P=0.443$). Naqvi MM et al (2004)¹⁰ also reported that congenital malformations of the fetus were common in elderly group (5.12% vs. 1.28%).

This present study shows mean time lag in starting breast feeding in elderly women was significantly ($P<0.001$) higher than that in non-elderly women (10 ± 2 v/s 7.2 ± 3). Similarly Achanna S et al (1995)¹² reported that mean time lag in breastfeeding is significantly higher in elderly primigravida.

This present study shows that there was no newborn death was recorded in any of the two group of women i.e. elderly and non-elderly. Although Shivalingam N et al (1989)¹¹ and Naqvi MM and Naseem A (2004)¹⁰ reported that perinatal mortality was relatively high in elderly groups and compared to young primigravida.

CONCLUSIONS

It was concluded that among maternal pregnancy outcomes PPH, Induction of labour and cervix dystocia were found significantly more in elderly primigravida than non-elderly. Likewise fetal pregnancy outcomes Oligohydramnios, Breech and Transverse lie were found significantly more in elderly primigravida than non-elderly. Likewise vaginal deliveries were significantly less in elderly primigravida than non-elderly. Likewise APGAR score and Mean birth weight was also significantly lower in newborns of elderly primigravida than non-elderly. Mean time in starting breast feeding was significantly higher in elderly primigravida than non-elderly women.

So it can be concluded that if elderly primigravida is cared at a modern hospital with advance techniques these adverse pregnancy outcome may not have significant difference in elderly and non elderly women or it can be managed.

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