Original Research Article

Pregnancy outcome in elderly primigravidae at a Nigerian Tertiary Hospital: a five-year review

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ABSTRACT

Background: Pregnancy though a physiologic process also comes with its complications. This has been found to be related to factors associated with the mother and fetus. Maternal age at first pregnancy is a determining factor which could affect pregnancy outcome. Objective of present study was to determine the effect of maternal age on obstetric outcome.

Methods: A five-year retrospective case control study involving primigravid women aged 35 years and above (elderly primigravidae) and the younger primigravidae aged below 35 years who delivered at the University of Abuja Teaching hospital (UATH) between 2012 and 2016. Data were collected from their case notes, antenatal and delivery registers. For comparative purposes, obstetric and perinatal parameters including antenatal, labour, delivery, postpartum factors were collected for both the elderly primigravidae and younger primigravidae. A total of 6,052 deliveries, of which 2,456 were primigravidae and 42 of them were ≥35 years of age. Out of 42 cases, only 30 folders were found and analyzed. The matched controls were selected consecutively after each elderly primigravidae in the register without prior knowledge of their pregnancy outcome. The data was analyzed using SPSS version 20. Chi square test X2 and student T test were used for comparison of the two groups. Statistical significance was set at P values of ≤ 0.05 at 95% confidence interval.

Results: The incidence of elderly primigravidae was found to be 1.2% in this study. There was increased risk of hypertensive disorders in pregnancy, caesarean delivery and low APGAR scores in the elderly primigravidae group but these were not statistically significant. No other differences in obstetrics and neonatal outcome were found between the two groups.

Conclusions: Elderly primigravidae are at increased risk of hypertensive disorders in pregnancy and caesarean delivery than in younger primigravidae. On the other hand, neonatal outcome of the two groups were comparable.

Keywords: Elderly primigravidae, Outcome, Pregnancy

INTRODUCTION

Elderly primigravidae have a high risk of complications including medical conditions in pregnancy, malpresentations, increased incidence of instrumental deliveries and caesarean section rate to mention a few.1 The age at first delivery is influenced by various socioeconomic, religious and complex cultural variables which varies from nation to nation.2-4 Career advancement and increase in the rate of divorce followed by remarriage have been found to be important contributing factors to this upward trend.5-7 Data suggest
that around 40% of all women develop some complication.\textsuperscript{5}

Elderly primigravidae are generally believed to have decreased fertility and increased risk for adverse pregnancy outcome.\textsuperscript{8}

Poor oocyte qualities is associated with an increased risk for aneuploidy, chromosomal abnormalities and spontaneous abortion in this group of women who are routinely screened for these abnormalities in some countries.\textsuperscript{9} However with the improvement in obstetric care this risk have continued to be a subject of controversy.\textsuperscript{10} Some authors noted that pregnancy and birth outcomes in elderly primigravidae are poor, while others reported no difference.\textsuperscript{7,11-14}

Therefore, this study was designed to compare pregnancy and birth outcomes of elderly primigravidae with their younger counterparts.

METHODS

A five year retrospective case control study involving primigravid women aged 35 years and above (elderly primigravidae) and the younger primigravidae aged below 35 years who delivered at the University of Abuja Teaching hospital (UATH) between 2012 and 2016.

Data were collected from their case notes, antenatal and delivery registers. For comparative purposes, obstetric and perinatal parameters including antenatal, labour, delivery, postpartum factors were collected for both the elderly primigravidae and younger primigravidae. A total of 6,052 deliveries, of which 2,456 were primigravidae and 42 of them were $\geq$35 years of age. Out of 42 cases, only 30 folders were found and analyzed.

The matched controls were selected consecutively after each elderly primigravidae in the register without prior knowledge of their pregnancy outcome. The data was analyzed using SPSS version 20.

Chi square test $X^2$ and student T test were used for comparison of the two groups. Statistical significance was set at $P$ values of $\leq 0.05$ at 95% confidence interval.

RESULTS

A total of 6,052 delivered during the period under review, out of which 40.6% were primigravidae. Elderly primigravidae constituted 1.2% (n=30) while younger primigravidae were 98.8% (n=2,456).

In the study group, 83.3% (n=25) had tertiary education compared to 43.3% (n=13) in the control group while 16.7% (n=5) had secondary level of education in study group compared to 53.3% (16) in the control group. The difference was statistically significant ($p <0.05$) (Table 1).

Parturients in the study group booked early for antenatal clinic compared to their counterparts (33.3% versus 13.3%) and this was statistically significant.

### Table 1: Socio demographic characteristics.

|                        | Study group, N=30 | Control group, N=30 | $X^2$ | P-value |
|------------------------|-------------------|---------------------|-------|---------|
| Level of education     |                   |                     |       |         |
| Secondary              | 5                  | 16.7                | 16    | 53.3    | 9.58   | 0.002 |
| Tertiary               | 25                 | 83.3                | 13    | 43.3    |        |       |
| Unspecified            | 0                  | 0                   | 1     | 3.3     |        |       |
| Gestational age at booking |               |                     |       |         |
| *Early booking <17    | 10                 | 33.3                | 4     | 13.3    | 5.39   | 0.020 |
| *Late booking $\geq$17| 7                  | 23.3                | 15    | 50.0    |        |       |
| Unbooked               | 13                 | 43.3                | 11    | 36.7    |        |       |
| Gestational age at delivery |            |                     |       |         |
| $<37$ weeks            | 10                 | 33.3                | 8     | 30.0    | 0.87   | 0.351 |
| $\geq37$ weeks         | 20                 | 66.7                | 22    | 70.0    |        |       |

*WHO 2002

Preterm delivery was commoner in the study group (33.3%) compared to the control group (20.0%). However, the incidence of term deliveries was 66.7% in the elderly primigravidae in contrast to the control group (70.0%) but these differences were not statistically significant.

Antenatal complications of elderly primigravidae compared with younger primigravidae, the difference between the study and the control group were in preterm labour and PROM; 0.0%, 0.0% (n=0) in the study group compared to 3.3%, 3.3% (n=1) in the control group (Table 2).
Mode of delivery, 60.0% (n=18) in the study group had Caesarean section compared to 33.3% (10) in the control group while, 33.3% (n=10) had Spontaneous vaginal delivery in the study group and 66.7% (n=20) in the control group. This was statistically significant with p <0.05 (Table 3).

Table 2: Antenatal complications of elderly primigravidae compared with younger primigravidae.

| Complication                        | Study group, N=30 | Control group N=30 | X²   | P-value |
|-------------------------------------|-------------------|--------------------|------|---------|
| Hypertensive disorder in pregnancy | 8                  | 3                  | 0.12 | 0.732   |
| Diabetes Mellitus                   | 1                  | 0                  | 0.47 | 0.495   |
| Uterine fibroid                     | 3                  | 2                  | 0.12 | 0.495   |
| APH                                 | 1                  | 0                  | 0.47 | 0.778   |
| Anaemia in pregnancy                | 4                  | 2                  | 0.02 | 0.891   |
| Diabetes Mellitus                   | 1                  | 0                  | 0.47 | 0.778   |
| Uterine fibroid                     | 3                  | 2                  | 0.02 | 0.891   |
| Preterm labour                      | 0                  | 0                  | 2.30 | 0.003   |
| Post term                           | 1                  | 0                  | 2.30 | 0.003   |
| Macrosomia                          | 0                  | 0                  | 2.30 | 0.003   |
| No complication                     | 10                 | 11                 | 6.69 | 0.010   |

Table 3: Mode of delivery of elderly primigravidae and younger primigravidae.

| Mode of delivery                  | Study group, N=30 | Control group, N=30 | P-value |
|-----------------------------------|-------------------|---------------------|--------|
| Spontaneous vagina delivery      | 10                | 20                  | 0.020  |
| Instrumental vagina delivery     | 2                 | 0                   |        |
| Caesarean section                | 18                | 10                  | 33.3   |

Intrapartum complication, preeclampsia accounted for 10% (n=3) in study group and 3.3% (n=1) in control group. However, this was not statistically significant (Table 4). Average gestational age and mean birth weight respectively. The study groups the mean gestational age was 37.2 weeks and mean birth weight was 3.0kg compared to 38.5 weeks and 2.8kg in the control group. This was not statistically significant (Table 5).

Table 4: Intrapartum complications of elderly primigravidae compared with younger primigravidae.

| Complication                        | Study group | Control group | X²   | P-value |
|-------------------------------------|-------------|---------------|------|---------|
| Malpresentation                     | 3           | 3             | 0.00 | 1.000   |
| Fetal distress                      | 6           | 6             | 0.00 | 0.00    |
| Pre eclampsia                       | 3           | 1             | 1.07 | 0.301   |
| Cephalopelvic disproportion         | 0           | 1             | 0.20 | 0.339   |
| PPH                                 | 0           | 0             | 1.02 | 0.313   |
| Preterm labour                      | 0           | 2             | 2.07 | 0.516   |
| Prolonged labour                    | 1           | 0             | 1.02 | 0.313   |
| Macrosomia                          | 0           | 0             | 1.02 | 0.313   |

Table 5: Gestational age and birth weight neonates of elderly primigravidae compared with younger primigravidae.

| Parameter                           | Study group, N=30 | Control group, N=30 | Mean difference | t     | 95% CI          | P-value |
|-------------------------------------|-------------------|---------------------|-----------------|-------|----------------|---------|
| Gestational age (weeks)             | 37.2              | 38.5                | 1.23            | 1.257 | -0.327 to -0.749 | 0.214   |
| Mean birth weight (kg)              | 3.0               | 2.8                 | 0.19            | 0.966 | -0.209 to -0.598 | 0.338   |
Birth asthysxia, preterm delivery, still birth and low apgar score at 1 and 5 minutes respectively were more common in the study group compared to the control group (Table 6).

**DISCUSSION**

The incidence of primigravidae in this study was 40.6%, 1.2% of them were elderly primigravidae of ≥35years of Port Harcourt and 1.6% reported in Jordan.15,16 This proportion seems to be lower compared to other studies age. This incidence is higher than those found in Maiduguri 0.42%, 0.07% reported in Ibadan, and 0.65% reported in Malaysia but lower than 1.4% reported in, which reported an incidence of 24.5% of primigravidae above 40 years old.15,17-19 This is related to the recent trend in industrialised countries towards delayed child bearing that reflects the increasing commitment of women to prolonged training and professional employment this was also reflected in this study as most of the elderly primigravidae are of tertiary level of education.20

The lower incidence found in Northeast Nigeria Bornu state (0.42%) is because women of this part of Nigeria venture into marriage at an earlier age and therefore, start child bearing before they are 35 years.15 However, the recent National Demographic Health Survey in 2008 showed that the age at first birth is rising slowly and the average age at first birth in the North Eastern Nigeria was 18.2years.21

Similarly, Joseph et al and Oboro and Dare, found an increase in Hypertensive disorders in pregnancy in the older women.22,23 This was found in this study, were elderly primigravidae had the highest number of hypertensive disorders in pregnancy than then younger mothers.

Present findings however, was in contrast to the findings by Ojule et al who reported no increase in occurrence of hypertensive disorders in pregnancy among elderly primigravida.18

Additionally, caesarean section for elderly primigravidae was higher than the younger primigravidae. This is similar to the series reported from other centers.15,24-26 Maternal age as a cause of increased maternal and perinatal morbidity and mortality has made a routine recommendation for caesarean section for these women in the past and this recommendation has been maintained by many Obstetricians. The higher concern for safety among the elderly primigravidae has been reported earlier by Windrigde et al.27

Maternal and obstetrician’s concern might be responsible for the undue intervention in the elderly primigravidae. Until evidence of the benefit of such intervention is established, elderly primigravidae should have adequate counselling and be allowed to make informed choice on their mode of delivery and also be supported to try vaginal delivery were feasible.15

Present study shows that gestational age and mean birth weight were not statistically significant. Contrasting findings were made by other Authors like Jahromi and Husseini, were the mean birth weight was significantly lower in the newborn of elderly primigravidae than younger mothers.28

Present study revealed no significant difference in terms of foetal outcome, still birth, birth asphyxia and preterm delivery between the two groups but there was APGAR score in elderly primigravidae compared to younger mothers. This finding is similar to those found by Ojule et al and Oboro and Dare.14,23

**CONCLUSION**

Elderly primigravidae are at increased risk of hypertensive disorders in pregnancy and caesarean delivery than in younger primigravidae. However, there is no difference in the fetal outcome between the two groups.

Probably there is need for elder primigravide to be given a chance at vaginal delivery. However, multicentre trial

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**Table 6: Neonatal outcome of elderly primigravidae compared with younger primigravidae.**

| Parameter          | Study group, N=30 | Control group, N=30 | X² | P value |
|--------------------|-------------------|---------------------|----|---------|
| Birth Asphyxia     | 9 (30.0)          | 7 (23.3)            | 2.01 | 0.571   |
| Still birth        | 2 (6.7)           | 1 (3.3)             |    |         |
| Preterm birth      | 10 (33.3)         | 8 (26.7)            |    |         |
| No complication    | 9 (30.0)          | 14 (46.7)           |    |         |
| Apgar Scores       |                   |                     |    |         |
| 0-3                | 1 (3.3)           | 2 (6.7)             | 0.91 | 0.634   |
| 4-6                | 8 (26.7)          | 5 (16.7)            |    |         |
| 7-10               | 19 (63.3)         | 22 (73.3)           |    |         |
could be carried out in our environment to determine if there is any difference in fetal outcome.

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