ORIGINAL ARTICLE

PREVALENCE AND OUTCOME OF PREGNANCY AMONG ELDERLY PRIMIGRAVIDA IN AMINU KANO TEACHING HOSPITAL, KANO: A 5 YEAR REVIEW

[1]IBRAHIM SA, [2]JABBO MA, [1]ATTAH AR, [1]GARBA ID, [1]MUHAMMAD Z.

ABSTRACT

Background: As women increasingly delay child bearing, the proportion of women having their first delivery at "advanced maternal age" is expected to rise. These elderly primigravidae have traditionally been considered to be at increased risk of adverse maternal and perinatal outcomes compared to their younger counterparts, because of associated pregnancy and labour complications.

Objectives: To determine the prevalence of elderly primigravidae and compare their pregnancy outcome with that of younger primigravidae in Aminu Kano Teaching Hospital, Kano.

Materials And Methods: This was a retrospective case control study comparing the pregnancy outcome of primigravid mothers aged 35 years and above (elderly primigravidae) with those of younger primigravidae aged 20-25 years, who delivered at Aminu Kano Teaching Hospital between January 2009 and December 2013.

Results: There were 18,452 deliveries during the period under review, out of which 295 were primigravidae aged 35 years or above giving a prevalence of 1.6%. There was statistically significant higher preterm delivery rate (X^2= 10.30, P= 0.001) and caesarean delivery rate (X^2= 12.15, P= 0.0001) among the elderly primigravidae compared to younger primigravidae. The elderly primigravidae were more prone to hypertensive disorders in pregnancy (X^2=23.96, P=0.0001) and diabetes (X^2=4.689, P=0.030) compared to the younger primigravidae. The prevalence of antepartum haemorrhage (X^2=6.434, P=0.011) and uterine fibroids (X^2=5.549, P=0.019) were also statistically significant among the elderly primigravidae compared to the younger primigravidae. There was no significant difference in the other maternal and foetal outcome measures.

Conclusion: The prevalence of elderly primigravidae in this study was 1.6%. The prevalence of obstetric complications such as preterm delivery, antepartum haemorrhage, uterine fibroids co-existing with pregnancy and medical conditions like hypertensive disorders in pregnancy and diabetes mellitus are higher among elderly primigravidae compared to younger primigravidae. The elderly primigravidae were also more liable to have caesarean deliveries than the younger primigravidae. However there was no difference in the fetal outcome in the two groups.

KEYWORDS: Elderly primigravida, prevalence, younger primigravida, obstetric and neonatal outcome.

[1]Department of Obstetrics and Gynaecology, Bayero University/Aminu Kano Teaching Hospital, Kano.
[2]Usumanu Danfodio University Teaching Hospital, Sokoto

Correspondence to:
DR S A IBRAHIM,
Department of Obstetrics and Gynaecology, Aminu Kano Teaching Hospital, Kano.
eMail:- ibrahimsaidu@yahoo.com

INTRODUCTION

In obstetric practice, maternal age is an important determinant of the outcome of pregnancy and both extremes of age are known to be associated with adverse maternal and foetal outcomes. The elderly primigravida is defined as a woman who goes into pregnancy for the first time at the age of 35 years or more[1,2].The definition of what constitutes advanced maternal age in obstetric literature is variable. Most authors have agreed on a lower

limit of 35 years, while others have used 40 years, and some more, but pregnancies in women 35 years old or more are considered to be high risk.[3,4]

The trend of women aged 35 years and above undergoing their first pregnancies has been on the increase. Number of factors might be responsible for this increasing trend. In recent times, women have changed their life styles 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 childbearing, resulting in an increase in maternal age at first pregnancy. Advances in assisted reproductive technology (ART), and increase in the rate of divorce, followed by re-marriage, all contribute to this upward trend.[5]Infertility problems are more prevalent as a woman gets older, yet modern technology has helped many of these women to achieve pregnancy, thus there are more pregnant women over the age of 35 years now than before.[4,5] Elderly primigravidae may be classified into two groups[1]: One with high fecundity– a woman married late but conceives soon after and one with low fecundity – a woman married early but conceives long after marriage. The later is prognostically less favourable so far as obstetric outcome is concerned[5].

Previous studies have suggested that elderly primigravidae are prone to developing medical and obstetric complications in pregnancy such as miscarriages, hypertensive disorders in pregnancy, gestational diabetes, malpresentation, preterm labour and antepartum haemorrhage[1-4]. They also have higher rates of multifetal gestation and uterine fibroids coexisting with pregnancy. In labour, they are also at increased risk of caesarean section and instrumental vaginal delivery. Furthermore, the incidence of foetal distress, foetal congenital anomalies and perinatal morbidity and mortality are significantly higher among the elderly primigravidae than their younger counterparts.[1-4] While other studies challenge these findings.[8,9]
This study tried to compare the pregnancy outcome in elderly primigravidae with those of younger primigravidae aged 20-25-years.

MATERIALS AND METHODS

This was a retrospective case control study comparing the pregnancy outcome of all primigravid mothers aged 35 years and above (elderly primigravidae) who delivered at Aminu Kano Teaching Hospital between January 2009 and December 2013, with younger primigravidae aged 20-25 years, as the control group. Women in the age group of 20-25 years were taken as control, because it is an age group with favourable obstetric outcome.[10]

The study and control subjects were identified from the hospital antenatal and delivery registers and their case notes retrieved. The recruited women (study and controls) booked before 20 weeks of gestation, attended antenatal clinic regularly and delivered in the hospital's labour ward. Those who attended antenatal care in this hospital but did not deliver here were excluded as well as those whose pregnancy did not reach the age of viability (28 weeks gestation). The matched control group were the next younger primigravida who delivered after the case of an elderly primigravidae.

The data extracted from the patients' case files included: their socio-demographic characteristics such as age, level of education and marital status; parity, maternal complications such as preterm labour, post term delivery, pregnancy induced hypertension/pre-eclampsia, antepartum eclampsia, co-existing fibroids, multiple gestation, caesarean delivery and instrumental deliveries. The fetal outcomes studied are low birth weight, congenital anomalies and still birth. Ante-partum, intra-partum and post-partum complications. The mode of delivery,

including 6 weeks of post-natal condition of mother and baby were also extracted. The total number of deliveries for the period was also determined. The data was entered into a personal computer and analyzed using Epi info version 7.01software (CDC Atlanta, Georgia, USA). The results were presented as simple percentages, using frequency tables. The Chi-square test (X^2) was used for assessing the significance of association between categorical groups. A P-value of <0.05 was considered statistically significant.

The following definitions were used in this study: elderly primigravidae are those having their first delivery at age 35 years and above[1,2]. Antepartum haemorrhage (APH) was defined as bleeding from the genital tract after the 28th week of gestation and before delivery of the baby[1-4]. Post-term pregnancy is that pregnancy continuing beyond 42 weeks of gestation[1-4]. Preterm babies are those born less than 37 completed weeks gestation[1,3]. Low birth weight infant was defined as one whose weight was less than 2500g[1,4].

RESULTS

There were 18,452 deliveries during the period under review out of which 295 were primigravidae age 35 years or above giving a prevalence of 1.6%. A total of 280 files were retrieved making a file retrieval rate of 94.9%.

Majority of the elderly primigravidae were less than 40 years with mean age of 36.6 ± 2.4 years, while in the control group (younger primigravidae) the mean age was 24.6 ± 2.5years. Table 1 shows the socio-demographic characteristics of the elderly primigravida and the younger primigravida. Among the elderly primigravidae, all (100%) were married while, 276 (98.6%) of the younger primigravidae were married. Formal education was highest among the elderly primigravidae 221 (78.9%) compared to the younger primigravidae 112 (40%).

Table 2 compared the obstetrics complications among the two groups. Preterm delivery was observed more frequently among elderly primigravidae 31 (11.1%) than the younger primigravidae 11 (3.9%) with X^2 *of 10.30 and P* 0.001. This was statistically significant. There was however no statistically significant difference in the post-term delivery rate for the elderly primigravidae 3 (1.1%) compared to the control group 5 (1.8), $X^2 = 0.507$, $P = 0.476$.Fifty six (20%) women among the elderly primigravidae developed pregnancy induced hypertension and/or pre-eclampsia during antenatal period compared to 17 (6.1%) in the control group. This was statistically significant with X^2 of 23.96 and P=0.0001.Similarly the prevalence of diabetes was found to be higher among the elderly primigravidae 11 (3.9%) than younger primigravidae 3 (1.1%). The X^2 was 4.689 P=0.030. This was statistically significant. Among the elderly primigravidae 13 (4.6%) were observed to have antepartum haemorrhage compared to the younger primigravidae 3 (1.3%). The X^2 was 6.434 and P= 0.011 which was statistically significant.

Pregnancy coexisting with uterine fibroid was seen in 12 (4.3%) of elderly primigravida while 3 (1.1%) were seen among the young primigravidae. The difference was statistically significant with X^2 of 5.549 and P of 0.019. There was no statistically significant difference in the prevalence of multifetal gestation among elderly primigravidae 4 (1.4%) and the younger primigravidae 2 (0.7%), X^2= 0.169 and P=0.682.

The Caesarean delivery rate was statistically higher among the elderly primigravidae 114 (40.7%) compared to the control group 75 (26.8%) with X^2 of 12.15 and P= 0.0001. However, there was no statistically significant difference in instrumental delivery rates among elderly primigravidae 4 (1.4%) compared to the control group 9 (3.2%), X=1.969, P=0.161.

Neonatal outcome among the two groups is shown in table 3. There was no statistically

significant difference in the neonatal outcome between the two groups. Low birth weight among the infants of the elderly primigravidae was 31 (11.1%) compared to the younger primigravidae 22 (7.9%), X^2= 1.688, P=0.194. Congenital anomaly occurred in 5 (1.8%) of infants among elderly primigravidae compared to younger primigravidae 2 (0.7%) with X^2 of 1.302 and P 0.253. Similarly 5 (1.8%) of elderly primigravidae had stillbirth compared to 3 (1.1%) of younger primigravidae, X^2=0.507 and P=0.476.

Table-1: Socio-demographic characteristics of the study population

Study group	**Control group**	
Socio-demographic characteristics	No (%)	No (%)
Age (mean±SD) years	36.6±2.4	24.6±2.5
Marital status		
Married	280 (100)	276 (98.6)
Single	0 (0)	4 (1.4)
Total	280 (100)	280 (100)
Formal education	221 (78.9)	112 (40)

Table-2: Obstetrics complications

Complications	**Study group**	**Control group**	**X^2**	**P Value**
	No (%)	No (%)		
Preterm labour	31 (11.1)	11 (3.9)	10.30	0.001
Post term delivery	3 (1.1)	5 (1.8)	2.333	0.111
PIH/Pre-eclampsia	56 (20)	17 (6.1)	23.96	0.000
Diabetes mellitus	11 (3.9)	3 (1.1)	4.689	0.030
Antepartum Haemorrhage	13 (4.6)	3 (1.1)	6.434	0.011
Coexisting fibroid	12 (4.3)	3 (1.1)	5.549	0.019
Multiple gestation	4 (1.4)	2 (0.7)	0.169	0.682
Caesarean section	114 (40.7)	75 (26.8)	12.15	0.001
Instrumental delivery	4 (1.4)	9 (3.2)	1.969	0.161

Table-3: Neonatal outcome

Complications	**Study group**	**Control group**	**X^2**	**P Value**
	No (%)	No (%)		
Low birth weight	31 (11.1)	22 (7.9)	1.688	0.194
Congenital anomaly	5 (1.8)	2 (0.7)	1.302	0.253
Stillbirth	5 (1.8)	3 (1.1)	0.507	0.476

DISCUSSION

The prevalence of elderly primigravidae in this study 1.6% is higher than 0.42% reported in Maiduguri[11] but lower than 2.6% reported in Nnewi.[12] The lower prevalence of elderly primigravida in this study compared to studies in South-East Nigeria may be related to early age at marriage in this region.

There was preponderance of formal education among the elderly primigravidae compared to younger primigravidae. The pursuit for higher education and career perhaps contributed to the delay in starting child bearing among them. This finding was similar to that reported in other studies in the country.[11-13]

This study also demonstrated that elderly primigravidae were more likely to develop diabetes mellitus and hypertensive disorders in pregnancy than younger primigravidae. It may not be unconnected to the fact that advancing maternal age is known to increase the risk of chronic medical diseases particularly diabetes mellitus and hypertension[1-3].

Similarly, the prevalence of antepartum hemorrhage (placenta praevia and abruptio placenta) was higher among elderly primigravidae in this study. Many studies have also reported higher incidence of antepartum hemorrhage among elderly primigravidae.[11-15] Increase incidence of medical disorders in pregnancy with increasing maternal age, especially hypertensive disorders, may predispose the older women to having abruptio palcenta, while the presence of uterine fibroids in the upper uterine segment may predispose the older women to having placenta praevia because of unfavourable endometrium at the site of the fibroids.[1-4]

Uterine fibroid has been associated with delay in childbearing, and women with previous infertility.[1-2] It is not clear if infertility is the cause of uterine fibroid or vice versa, but there is an association between the two.[1,2] This could have accounted for why there was higher frequency of uterine fibroid among the elderly primigravidae compared to the younger women. Similar findings were reported in other studies.[13-15]

Preterm delivery rate was significantly higher among elderly primigravidae in this study. The increased risk of preterm delivery in elderly primigravidae have also been reported in other studies done in the country.[12-15] This may be as a result of increased pregnancy complications including antepartum hemorrhage and hypertensive disorders warranting delivery before term in this group.

However, post term pregnancies were found to be higher among the younger primigravidae, this may be because the care givers are more comfortable allowing the younger mothers to go post-date before inducing them. Additionally, higher rate of the elective caesarean section for the elderly primigravidae shown in the study will result in lower occurrence of post date among them.

The incidence of caesarean section among the elderly primigravidae was higher than among the younger group which is similar to report from other centres.[11-16] This may be related to higher rates of antepartum complications seen in this study such as antepartum hemorrhage, hypertensive disorders in pregnancy which may necessitate abdominal delivery. Concerns about the maternal age as a cause of increase maternal and perinatal morbidity and mortality has made the routine recommendation of elective caesarean section for these women in the past and this tradition has been maintained by many doctors. In some cases, particularly with previous history of infertility, the mothers are so apprehensive. Both maternal and obstetrician's concerns are responsible for the undue caesarean section in the elderly primigravidae. The implication of this increased intervention is that it will lead to

increased medical demand on the scarce resources particularly in a low resource setting unless caesarean section is carried out based on an evidence base approach.

Like most studies in the country, there was no significant instrumental delivery among the elderly primigravidae compared to the young primigravidae.[11-17] This is contrary to report from a study done outside the country.[18] The rates of instrumental deliveries in the country is low which may be as a result of lack of experienced personnel for this procedures.[19,20] Most obstetricians will prefer to carry out a caesarean section for an elderly primigravida rather than taking the risk of an instrumental delivery.

The incidence of multifetal pregnancy has been found to increase with increasing maternal age[1-3]. However, in this study the prevalence of multifetal gestation among elderly primigravida was not significantly higher than among the younger primigravidae. This may probably be as a result of the low incidence of multifetal pregnancy in our community of Northern Nigeria compared to South West Nigeria.[21]

The fetal outcome among the older primigravid women is generally controversial, some studies have reported a poor outcome among the elderly primigravidae.[16,22,23] However, the perinatal outcome among elderly primigravidae was not significantly different from younger primigravidae in this study. Similar finding was reported in some studies in the country.[11-17]

CONCLUSION

Elderly primigravidae are at an increased risk of gestational diabetes, hypertensive disorders in pregnancy, antepartum hemorrhage, uterine fibroid and preterm delivery. The rates of cesarean delivery among them was also higher than the younger primigravidae. However there is no significant difference in the fetal outcome among the two groups.

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