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Pregnancy outcome in elderly primigravidae

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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 because of associated pregnancy and labor complications and, therefore, need to be evaluated.

Aim: To determine the prevalence of elderly primigravidae and compare their pregnancy outcome with that in younger primigravid mothers in Port Harcourt.

Materials and Methods: It was a two-year retrospective case-controlled study. The study population consisted of all primigravid mothers aged 35 years and above (elderly primigravidae) who delivered at the University of Port Harcourt Teaching Hospital (UPTH) between 1st January, 2005 and 31st December 2006, and the control group consisted of all other primigravid women less than 35 years of age. Selected maternal and perinatal sociodemographic characteristics and other outcome variables were extracted from patients' case notes. The data were entered into a personal computer and analyzed using SPSS version 11.0. The χ^2 - test was used for comparison of both groups and statistical significance set at $P < 0.05$.

Results: Of the 5147 parturients who delivered during the study period, 74 (1.4%) were elderly primigravidae. They constituted 4.7% of all primigravidae. The caesarean delivery rate (58.1% vs 32.1%, $P = 0.001$), preterm delivery rate (10.8% vs 5.1%, $P = 0.03$), and fetal macrosomia rate (16.2% vs 6.6%, $P = 0.002$) were significantly higher in the elderly primigravidae than the younger primigravid controls. There were no significant differences in the other maternal and perinatal outcome measures.

Conclusion: The prevalence of elderly primigravidae in our centre is 1.4%. The elderly primigravidae are at increased risk of preterm, macrosomic, and caesarean deliveries compared to their younger primigravid counterparts.

Keywords: Elderly primigravidae, perinatal, maternal outcome, younger primigravidae

Résumé

Contexte: Comme les femmes plus retardent l'enfant portant, la proportion de femmes ayant leur première livraison à "âge maternel avancé" devrait augmenter. Ces personnes âgées admises ont traditionnellement été considérée comme un risque accru d'effets indésirables de santé maternelles et périnatales raison de grossesse associée et des complications du travail et, par conséquent, doivent être évalués.

Objectif: Afin de déterminer la prévalence des personnes âgées admises et comparer leurs résultats de la grossesse avec celle chez les plus jeunes mères primigravid à Port Harcourt.

Matériaux et méthodes: C'est une étude de cas contrôlée rétrospective de deux ans. L'étude de la population se composait de toutes les mères primigravid, âgées de 35 ans et au-dessus (personnes âgées admises) qui a rendu à l'hôpital d'enseignement de l'Université de Port Harcourt (UPTH) entre le 1^{er} janvier 2005 et le 31 décembre 2006 et le groupe de contrôle se composait de toutes les autres femmes de primigravid moins de 35 ans. Caractéristiques sociodémographiques maternelle et périnatale sélectionnés et autres variables de résultat ont été extraites de notes cas des patients. Les données ont été entrées dans un ordinateur personnel et analysés à l'aide de SPSS version 11.0. χ^2 - test a été utilisé pour la comparaison des deux groupes et signification statistique de $P < 0.05$.

Résultats: Les 5147 parturientes qui a rendu au cours de la période d'étude, 74 (1.4%) étaient âgées admis. Ils constituaient 4.7% de tous les admis. Le taux d'accouchement par césarienne (58.1% vs 32.1%, $P = 0,001$), taux de prématurité (10.8% vs 5.1%, $P = 0,03$) et le taux de macrosomie foetale (16.2% vs 6.6%, $P = 0,002$) ont été significativement plus élevée chez les personnes âgées admis que les plus jeunes témoins de primigravid. Il n'y a pas de différences significatives dans les autres mesures de résultats de santé maternelle et périnatale.

Conclusion: La prévalence des personnes âgées admis dans notre centre est de 1.4%. Les personnes âgées admis sont un risque accru de prématurité, macrosomiques et accouchements par césarienne par rapport à leurs homologues primigravid plus jeunes.

Mots clés: Personnes âgées admis, issue périnatale, maternelle, jeune admis

Introduction

With increasing cases of infertility, educational and career pursuits among women resulting in delay in child-bearing, more women are starting their obstetric career at the age 35 years and above.^[1] Advanced maternal age and parity constitute two major factors in the outcome of pregnancy and labor, both in developed and developing countries.^[2] 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.^[4] 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.^[5]

With advanced maternal age, pregnant women are also more prone to medical conditions that can adversely influence their health and that of their fetuses. Women aged 35 years and above have been reported to have twice the rates of antepartum hospitalization than their younger counterparts.^[6] Advanced maternal age is a risk indicator of several pregnancy and labor complications including spontaneous miscarriage, ectopic pregnancy, chromosomal abnormalities, twins, degenerating fibroids, hypertensive disorders, gestational diabetes, prolonged labor, cephalopelvic disproportion necessitating operative delivery, low birth weight, antepartum and intrapartum fetal loss and neonatal mortality.^[7] Although these pregnancy complications have been observed over time, information regarding maternal and perinatal outcomes has been inconsistent. While some studies have found adverse outcomes among the elderly primigravidae^[8,9] others found no significant difference.^[10,11]

This study examines the maternal and perinatal outcome among elderly primigravidae, and compares them with those of younger primigravidae at the

University of Port-Harcourt Teaching Hospital (UPTH).

Materials and Methods

This was a two-year retrospective case controlled study involving primigravid women aged 35 years and above (elderly primigravidae) who delivered at the UPTH between 1st January 2005 to 31st December 2006, and the younger primigravidae aged below 35 years, as the control group. Ethical approval was given by the UPTH Ethics Committee.

The study and control subjects were identified from the hospital antenatal and delivery registers and their case notes retrieved. Information on their sociodemographic characteristics, antenatal history, maternal and labor complications, babies' sex, weight, Apgar scores, and perinatal complications were extracted. The data was coded, entered into a personal computer and analyzed using SPSS version 11.0 software. The results are presented as rates and proportions in tables. The Chi-square test was used for comparison of the two groups. Statistical significance was set at P values of ≤ 0.05 at 95% confidence levels.

The following definitions were used in this study: elderly primigravidae are those having their first delivery at age ≥ 35 years,^[3,12] younger primigravidae are those having first delivery at age ≤ 34 years,^[12] preterm babies are those born at ≤ 36 weeks of gestation,^[13] term babies refers to those born between 37 and 42 weeks gestation,^[13] post-term; those born >42 weeks of gestation.^[13] Birth asphyxia^[14] refers to babies whose 5 min Apgar score was <7 , babies who weighed <2.5 kg at birth are low birth weight,^[13] those who weighed between 2.5 and 3.9 kg are normal birth weight,^[13] while those who weighed ≥ 4.0 kg are macrosomic babies.^[13]

Results

There were a total of 5147 parturients during the period under review and 74 of these were elderly primigravidae, while 1515 were young

primigravid mothers. The prevalence of elderly primigravidae was 1.44%, accounting for 4.7% of all the primigravid mothers. Table 1 shows the sociodemographic characteristics of the elderly and younger primigravidae. The mean age of elderly primigravidae was 36.91 ± 1.87 years, while the mean age of other primigravidae was 26.78 ± 3.46 years.

All (100%) of the elderly primigravidae were married while, 1493 (98.5%) of other primigravidae were married. Sixty seven (90.5%) of the elderly primigravidae were Christians while 1490 (98.3%) of other primigravidae were Christians.

All (74) of the elderly primigravidae had formal education, of these 32 (43.2%) had secondary education while 42 (56.8%) had tertiary education. Only 18.5% (281) of the younger primigravidae had tertiary education while 87(5.7%) were uneducated.

Eight (10.8%) of the elderly primigravidae had preterm deliveries as compared to 77 (5.1%) of the young primigravidae who delivered before

Table 1: Sociodemographic characteristics

Variable	Elderly primigravidae		Younger primigravidae	
	No	%	No	%
Age (mean \pm SD) years	36.91 ± 1.87		26.78 ± 3.46	
Religion				
Christian	67	90.5	1490	98.3
Others	7	9.5	25	1.7
Total	74	100	1515	100
Marital status				
Married	74	100	1493	98.5
Single	0	0	22	1.5
Total	74	100	1515	100
Education				
Primary	0	0	87	5.7
Secondary	32	43.2	1147	75.7
Tertiary	42	56.8	281	18.6
Total	74	100	1515	100

Table 2: Gestational age at delivery

Variable	Elderly primigravidae		Younger primigravidae		P value
	No	%	No	%	
Gestational age (weeks)					
Preterm (≤ 36)	8	10.8	77	5.1	0.03
Term (37-42)	63	85.1	1366	90.2	
Post Term (>42)	3	4.1	72	4.7	0.9
Total	74	100	1515	100	

Table 3: Mode of delivery

Mode of delivery	Elderly primigravidae		Younger primigravidae		P value
	No	%	No	%	
Vaginal delivery	27	36.5	982	64.8	
Instrumental vaginal delivery	4	4.4	47	2.9	0.06
Caesarean delivery	43	58.1	486	32.1	0.00
Total	74	100	1515	100	

37 weeks of gestation. The difference was statistically significant $\chi^2 = 4.49$; $P = 0.03$. There was however no significant difference in the post-term delivery rate for the elderly primigravidae compared to the control group [(4.1% (3) vs 4.7% (72); $\chi^2 = 0.03$, $P = 0.9$] as illustrated in Table 2.

Table 3 shows the mode of delivery. Up to 58.1% (43) of the elderly primigravidae had caesarean delivery as compared to 486 (32.1%) of the younger primigravidae ($\chi = 23.75$, $P = 0.001$). The main indications for the caesarean deliveries were severe pre-eclampsia with unfavorable cervix, breech presentation, cephalopelvic disproportion, and placenta previa. However, the instrumental vaginal delivery rates of 4.4% (4) and 2.9% (47), respectively, for the elderly and young primigravidae was not significantly different ($\chi^2 = 4.57$, $P = 0.06$).

Eight (10.8%) of the babies delivered to the elderly primigravidae were low birth weight babies while 160 (10.6) of the babies of the younger primigravidae were low birth weight ($\chi = 0.15$, $P = 0.7$). However, a significantly larger proportion 12 (16.2%) of the elderly primigravidae had macrosomic babies compared to the younger primigravidae 101 (6.6%); $\chi = 9.9$, $P = 0.002$. The birth weight distribution is shown in Table 4.

Seven (9.5%) of the babies delivered to the elderly primigravidae had birth asphyxia while 148 (9.8%) of the babies of the young primigravidae had birth asphyxia. This was not statistically significant as $P = 0.9$. Similarly, 17 (1.1%) of the young primigravid mothers had stillbirths while there was none among the elderly primigravidae ($\chi^2 = 0.84$, $P = 0.3$). The perinatal mortality rate of the babies of the younger primigravidae was 11.34/1000 live births. There was no congenital malformation in both groups. The perinatal outcome is shown in Table 5.

Table 4: Birth weight distribution

Weight category	Elderly primigravidae		Younger primigravidae		P value
	No	%	No	%	
<2.50 kg	8	10.8	160	10.6	0.7
2.50-3.99 kg	54	73.0	1254	82.8	
≥4 kg	12	16.2	101	6.6	
Total	74	100	1515	100	

Table 5: Perinatal outcome

Outcome measures	Elderly primigravidae		Younger primigravidae		P value
	No	%	No	%	
Birth asphyxia	7	9.5	148	9.8	0.9
Stillbirth	0	0	17	1.1	0.3
Perinatal mortality rate (per 1000 live births)	-	-	11.34	-	-

Discussion

The results of this study indicate that elderly primigravidae are at increased risk of caesarean delivery compared to their younger primigravid counterpart, in keeping with findings of other investigators.^[8,9,11,12] The increased caesarean section rate in elderly primigravidae found in this study resulted from various pregnancy and labor complications, including placenta previa, cephalopelvic disproportion, breech presentations, and pre-eclampsia among others, similar to earlier findings.^[9,10,12]

There was also increased risk of instrumental vaginal delivery among the elderly primigravidae (4.4% vs 2.9%) compared to the younger primigravidae although this was not statistically significant ($P = 0.6$). The indications were mainly for maternal exhaustion and fetal distress in second stage of labor. The increased instrumental vaginal delivery rate in elderly primigravidae had previously been documented by other workers.^[13]

Similarly, the preterm delivery rate (10.8% vs 5.1%, $P = 0.03$) and fetal macrosomia (16.2% vs 6.6%, $P = 0.002$) were significantly higher in elderly primigravidae compared to the other primigravidae. The increased risk of preterm delivery in elderly primigravidae have been reported by other authors.^[9,11,12] This may be as a result of increased pregnancy complications including placenta previa and hypertensive disorders warranting delivery before term in this group.

There were no significant differences in other outcome measures: post-term delivery, low birth weight, birth asphyxia, and stillborn and perinatal mortality rates between the two groups. This is also in keeping with the results elsewhere.^[9,15,16]

The limitations of this study include its retrospective nature and the relatively small number of cases. Also,

being a hospital-based study; we were only able to assess the outcomes of viable pregnancies. Early pregnancy losses could not be examined, but have also been associated with advanced maternal age.^[16-18] Deliveries in our hospital constitute only a proportion of all deliveries and are therefore not representative of the entire situation in Port Harcourt.

The social status of the subjects was difficult to assess because of the retrospective nature of the study. The occupation of both women and their husbands do not necessarily correlate with their income and socioeconomic status in our experience in Port Harcourt. Artisans and unskilled workers with some oil workers have higher incomes and living standards than some professionals. Other sociodemographic variables including education, marital status and religion were similar between elderly primigravidae and their younger primigravid controls and therefore did not significantly influence the outcome measures.

Conclusion

This study shows that the elderly primigravidae are at increased risk of pre-term, macrosomic and caesarean deliveries compared to their younger primigravid counterparts.

Since there is presently no consensus on the negative impacts of advanced maternal age on the pregnancy outcome and whereas most of the studies have been retrospective and hospital based, a population-based study preferably a prospective one that will have a wider scope is advocated. Until this is done the inconsistencies that trail the results in this and other researches in these subjects will take a long time to settle.

References

1. Berkowitz GS, Skoovron ML, Lapinski RH, Berkowitz RL. Delayed Childbearing and the Outcome of Pregnancy. *N Engl J Med* 1990;322:659-64.

2. Orji EO, Ndububa VI. Obstetric performance of women aged over forty years. *East Afr Med J* 2004;81:139-41.
3. Chloe V, Fretts R. Pregnancy and advanced maternal age. In: Studd J, Lintan S, Chervena KF editors *Progress in Obstetrics and Gynaecology*. 17th ed. Philadelphia: Elsevier publishers; 2006. P. 113-24.
4. Center for Disease Control. Assisted Reproductive Technology (ART) Report: National Summary. 2002.
5. American College of Obstetricians and Gynecologists. ACOG Practice Bulletin No. 27: Clinical Management Guidelines for Obstetrician-Gynecologists. Prenatal diagnosis of fetal chromosomal abnormalities. *Obstet Gynecol* 2001;97:1-12.
6. Cleary GJ, Malone FD, Vidaver J, Ball RH, Nyberg DA, Comstock CH, *et al.* Impact of maternal age on Obstetric outcome. *Obstet Gynaecol* 2005;105:983-90.
7. Wildschut HI, Pregnancy antecedents of High pregnancy. In: James DK, Steer PJ, Weiner CP, Gonik B, editors. *High Risk pregnancy. Management Options*. 3rd ed. Philadelphia: Elsevier Publishers; 2006. p. 3-41.
8. Anate M, Akeredolu O. Pregnancy outcome in Elderly primigravidae at the University of Ilorin Teaching Hospital, Nigeria. *East Afr Med J* 1996;73:548-51.
9. Ziadeh SM. Maternal and perinatal outcome in nulliparous women aged 35 years and older. *Gynaecol Obstet Invest* 2002;54:6-10.
10. Oboro VO, Dare FO. Pregnancy Outcome in nulliparous women aged 35 years and older. *West Afr J med* 2006;25:65-8.
11. Ilesanmi AO, Fawole O, Olaleye DO, Arowojolu A. Pregnancy outcome in the Elderly primigravidae. *J Obstet Gynaecol* 1998;18:40-3.
12. Naqvi MM, Naseem A. Obstetrical risks in the older primigravidae. *J Coll Physicians Surg Pak* 2004;14:278-81.
13. Yerushalm YJ. The classification of new born infants by birthweight and gestational age. *Paediatr* 1963;32: 800-5.
14. Bako K, Chama C, Audu BM. Emergency Obstetric Care in a Nigerian Tertiary Hospital: A-20 year Review of Umbilical Cord Prolapse. *Niger J Clin Pract* 2009;12: 232-6.
15. Gharoro EP, Igbafe AA. Maternal age at first birth and obstetric outcome. *Niger J Clin Pract* 2002;5:20-4.
16. Ezra Y, Part MC, Farine D. High delivery intervention rates in nulliparous women. *Eur J Obstet Gynaecol* 2007;19:110-2.
17. Freeman-Wang T, Beski S. The older obstetric patients. *Curr Obstet Gynaecol* 2002;12:41-6.
18. WildSchut HIJ. Sociodemographic factors: Age, Parity, Social class and ethnicity. In: James DK, Steer PJ, Weiner CP, Gonik B, editors. *High Risk Pregnancy-Management Options*. 2nd ed. London: Harcourt publishers Limited; 2001. p. 39-52.

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