International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Impact Factor (2012): 3.358

Obstetric Performance in Pregnant Nigerian Women Aged 40 Years and Above at the Lagos University Teaching Hospital (LUTH) Between 2007 and 2011

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Abstract: ***Background:*** ***Advanced maternal age has been regarded as a risk factor for complications in pregnancy and with associated fetal morbidity.*** ***Methods:*** ***This was a case-control study comparing pregnancy outcome of 113 parturients aged 40years and older that delivered in our hospital and compared with women between ages 18 to 30 years between January, 2007 and December, 2011. Retrospective analysis of the antepartum and intrapartum records was done and compared to clinical outcome.113 parturients aged 40 years and above (study group SG) among 6285 parturients that delivered during the study period were compared with 113 parturients aged below 40 years (control group CG).*** ***Results:*** ***The incidence of pregnant women aged 40 years and above was 1.79% with a mean age of 41.03 +/- 1.47 (SD). The mean age of the control was 29.5 +/-4.00 (SD). The mean parity in the SG was 4.12 and 2.38 in the CG. Majority of the women in the SG (72%) were unbooked while majority (79.6%) in the CG were booked. All complications reviewed during pregnancy, labour and puerperium occurred more frequently in the SG than in the CG. Hypertensive disorders of pregnancy, Caesarean section, assisted breech delivery and postpartum haemorrhage were found to be statistically higher in the SG than the CG.*** ***Conclusion: Women aged 40 years and above have a higher risk of complications than younger nulliparous women. These older women have a higher risk of operative delivery, medical problems and neonatal complications. Although maternal morbidity was increased in the older women in this study, the overall neonatal outcome did not appear to be affected.***

Keywords: pregnancy, maternal age, parity, caesarean section, mortality.

1. Introduction

The obstetric performance in women aged 40 years and above is fraught with many complications; therefore they are considered high risk because of fet0-maternal complications that may arise [1,2,3]. These concerns are increasingly becoming very relevant today as many women are either delaying their first pregnancy or continuing to have babies later in life. In Nigeria, the marriage age has gone up due to socio-economic factors resulting in increased rate of unemployment and socio-cultural beliefs. Numerous studies carried out on Caucasian women in developed countries showed a higher risk of complications and poor outcome in them [1,2,3]. The perinatal mortality in the elderly primipara is higher than in the elderly multipara and they also have higher antenatal and intrapartum complications [1,3]

Reported complications include hypertensive disorders of pregnancy such as pre-eclampsia, antepartum haemorrhage, gestational diabetes mellitus, preterm delivery, preterm pre-labour rupture of membranes, malpresentations, abnormal labour patterns, instrumental deliveries including caesarean section, increased admissions of their babies into neonatal intensive care units and increased perinatal deaths [4,5.6.7]. Factors such as chronic hypertension and diabetes mellitus, which predates pregnancy in this group of women, worsens their obstetric performance [2].

Primiparity in these women also greatly increases the risk to their infants and this are attributed to their low fertility, untried reproductive system and psychological response to pregnancy, labour and postpartum child care. In our environment, the absence of preconception care, suboptimal labour monitoring facilities, poverty, lack of hospital infrastructure and staffing, adverse socio-cultural practices all combine to increase the risk significantly in these older gravid women [7]. It has however been shown in the developed countries, that with sound genetic diagnosis and counselling, together with appropriate prenatal care and active management of labour and delivery, the increasing number of women postponing their first pregnancies or having children into their later years can look forward to an excellent outcome [8].

In view of the upsurge of late marriages in our country and associated inadequacies of our maternity services, this study was carried out to determine the obstetric risk of our women in this category. This is with a view to suggest ways of preventing their occurrence, early recognition and institution of appropriate treatment in order to improve their obstetric career and feto-maternal outcome outcome.

2. Methodology

In this retrospective study, the Obstetric records of pregnant women aged 40years and above (**study group**) who delivered in LUTH between January 1, 2007 and December 31, 2011 were reviewed along with those of pregnant women aged below 40 years (**control group**) who delivered in the hospital within the same study period. The control group were selected by including every woman aged below 40 years whose labour and delivery occurred the same day as the study group. Data relating to the socio-demographic characteristics of the women, age, parity, booking status, pregnancy complications, labour complications and perinatal outcome were analysed. The pregnancy complications

considered were hypertensive disorders of pregnancy, gestational diabetes mellitus, antepartum haemorrhage, leiomyoma uteri co-existing with pregnancy, multiple pregnancy and gestational age at delivery. Labour data considered were duration of labour, mode of delivery; either spontaneous vaginal delivery or instrumental delivery and postpartum haemorrhage. Perinatal complications considered were intrauterine growth restriction using birth weight less than 2500grams, birth asphyxia using the Apgar scores at one and five minutes respectively, admission into neonatal intensive care unit and perinatal deaths

Statistical analysis was by Epi info 2008 and chi square and student t- test were used where appropriate as test of significance. P value of <0.05 was considered statistically significant. The letters SG and CG were designated as study group and control group.

3. Results

Out of 6285 deliveries conducted during the period under review, 113 were to women aged 40 years and above giving an incidence of 1.79% and ratio of 1 in 55.6. This is shown in **figure 1**, which also demonstrated the yearly incidence.

Figure 2 shows the age distribution of the study and control groups. In the study group, their ages ranged from 40 to 48 years with a mean of 41.03 years. The age range 40 to 44 years accounted for 98.2%. The age range of the control group was from 18 to 37 years with a mean of 29.56 years, while the range 25 to 29 accounted for 40.7%.

Table 1 shows the parity distribution. 90.3% of women in the study group were multigravid with a mean parity of 4.12, while primiparity occurred in only 9.7%. Only 62.8% of women in the control group were multigravid with a mean parity of 2.38.

Table 2 shows the booking status. 63.7% of the study group were unbooked compared to 20.4% in the control group.

Table 3 shows the incidence of complications occurring in both groups. There were more complications occurring in the SG than in the CG. The commonest complication was preterm delivery accounting for 18.6% in the SG and 14.2% in the CG with a P= 0.369. The most statistically significant complication was however hypertensive disorders of pregnancy accounting for 15% in the SG and 1.8% in the CG with a P < 0.05. Other complications identified were gestational diabetes mellitus, anaemia, cardiac disease in pregnancy, antepartum haemorrhage, fibroid coexisting with pregnancy and multiple pregnancy. They were all found to occur more frequently in the SG compared to CG, though not statistically significant.

Table 4 shows labour complications. Women in the SG had Caesarean delivery greater than twice that of women in the CG. This was statistically significant with a P < 0.05 as 41.6% of the SG were delivered by Caesarean Section compared to 19.5% in the CG. Other labour related complications identified during the study included postpartum haemorrhage, prolonged labour, instrumental delivery (forceps and vacuum delivery) and ruptured uterus. All these occurred with greater frequency in the SG. 33.6% of the SG had postpartum haemorrhage compared to 16.1% 0f the CG. This was statistically significant with a P < 0.002. Assisted breech delivery also occurred with greater frequency in the control (4.4%) than in the study (0.9%) group with a P < 0.05.

Table 5 shows fetal and neonatal complications occurring in babies born to mothers in the SG. The incidence of low birth weight, birth asphyxia, fetal distress and perinatal death in the SG were twice that in the CG. The commonest complication was low birth weight with an incidence of 20.7% in the SG and 11.7% in the CG. The mean birth weight of babies in the SG was 3.06 kg +/- 0.09 (SD and 3.20 kg +/- 0.71 (SD) in the CG. The P = 0.210. The SG had more babies with low Apgar scores at one minute with a mean of 6.58 +/- SD of 2.96 than the CG with 7.29 +/- 2.28. The P = 0.045. There was no statistically significant difference in the Apgar score at five minutes of both groups.

4. Discussion

The number of women delaying childbirth into their older years is on the increase. This could be attributed to the increasing awareness of the rights of a woman, resulting in better education and improving economic power for women. The incidence of pregnant women aged 40 years and above reviewed in this study is 1.79%. This is comparable to 1.87% reported from the United States [2] and much higher than 0.2% reported from Dublin [9].It is however lower than the incidence of 7.64% reported from Ilorin, Nigeria [7]. This can be attributed to the relative increase in urbanization in Lagos than Ilorin, decreased practice of family planning and the predominance of Islamic religion, which encourages polygamy. Therefore fewer women in Ilorin pursue education for economic empowerment. The mean age of the study group is 41.03 with the age range 40 to 44 years accounting for 98.2%. This is comparable to the result of 41.7 and 41.0 reported in previous studies [2,7]. The mean parity was 4.12 and this was lower than 6.0 reported by Sule- Odu [7]. Primiparity in this study was not significantly associated with increased perinatal death as reported by other studies [2,3]. Two perinatal deaths occurred among the 11 elderly primigravida giving an incidence of 18.1%. 63.7% of the women were unbooked, 37.5% of whom were delivered abdominally. This underscores the importance of antenatal care and hospital delivery in this group of women. Preterm delivery was the commonest complication occurring during pregnancy in these women with an incidence of 18.6%. This is similar to reports from other studies [9, 10, 11]. Hypertensive disorders of pregnancy were the only statistically significant complication identified during pregnancy in these women. This is probably because chronic hypertension occurs naturally with increasing age. It was associated with the most unfavourable perinatal outcome in this review, with a perinatal death incidence of 35.2% amongst the hypertensive women. This was also supported by results from other studies [1,2,12]. It is therefore imperative, that proper attention be given to the early detection and treatment of hypertension and or proteinuria in the older gravid women during their antenatal care. Medical complications such as diabetes mellitus and anaemia were noted to be higher in the SG than CG. This is probably

because the incidence of glucose intolerance rises with increasing age, while anaemia occurs more with increasing parity. One patient with cardiac disease was identified amongst the SG. This reflects advancement in the treatment of patients with cardiac disease with the result that more women are getting to childbearing age. Delivery via Caesarean section was high in the SG, with an incidence of 41.6%. This is in keeping with reports from other studies from different centres [12, 13, 14]. Contributory factors to this could be the higher incidence of maternal distress (1.8% in the SG compared to 0.9% in the CG) and medical complications such as hypertension and diabetes mellitus (8.0% in SG compared with 3.5% in CG) in the study group. Malpresentation, notably breech was twice as common in the SG as in the CG. The incidence of malpresentation was noted to be higher in the women of high parity in this study than those of low parity. This underscores the association between parity and malpresentation. This was also noted in studies from other centres [1,3,6,7]. The association between prolonged labour and postpartum haemorrhage was observed in this study with 72.7% of women in the SG, whose labour were prolonged developing postpartum haemorrhage. In the CG, 60% of women whose labour were prolonged developed postpartum haemorrhage. The association between increased risk for low birth weight babies, birth asphyxia and perinatal death and the older gravid woman was also established in this study as reported by other studies [10,11,12,15]. Only a marginal increase in the number of babies admitted into the neonatal intensive care was reported in this study. It is notable that with sound genetic diagnosis, pre-pregnancy counselling together with appropriate preconception care and the judicious management of labour and delivery, the increasing number of women postponing their first pregnancies or continuing to have babies in later life can look forward to an excellent outcome [8]. The contrast to above is what is obtainable in our society; therefore pregnancy and delivery still pose a significant risk to the health and life of the older gravid women and their babies in our society.

5. Conclusion

Pregnancy in women above 40 years still carries a significant risk more so in our environment. Therefore, deliberate alterations in the pattern and content of obstetric care offered to this group of women with respect to early detection and treatment of those complications prevalent in this review especially hypertensive disorders of pregnancy, the provision of adequate labour monitoring devices and facilities for emergency obstetric care should have a more favourable impact on their maternal and fetal outcome.

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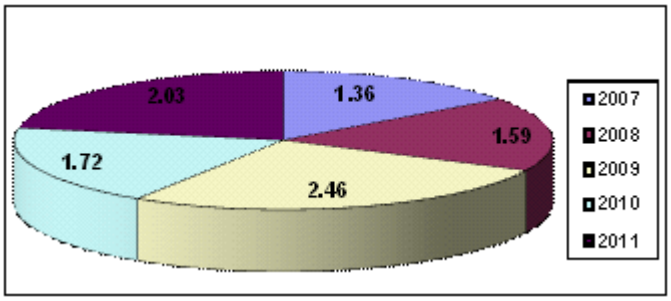

Figure 1: Shows that more women are delaying childbirth into their older years. The % of women aged 40 years and above having children increased from 1.36 % in 2007 to 2.03% in 2011.

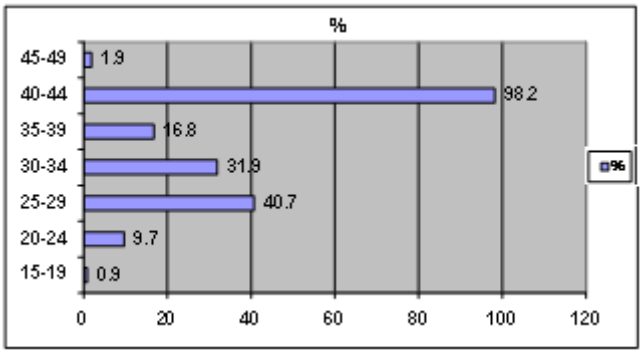

Figure 2: Majority of the women in the study group were aged between 40 and 44 years while in the CG they were between 25 and 29 years. The Mean +/-SD in the SG was 41.03 +/- 1.47 and 29.56 +/- 4.00 in the CG.

Table 1: Parity Distribution

Parity	*Study Group*	*Percentage*	*Control Group*	*Percentage*
0	11	9.70%	42	37.20%
1	8	7.10%	36	31.90%
2	16	14.20%	18	15.80%
3	37	32.70%	13	11.50%
4	19	16.80%	3	2.70%
5	22	19.50%	1	0.90%
Total	113	100	113	100

Table 2: Booking Status

Booking Status	*Study Group*	*Percentage*	*Control Group*	*Percentage*
Booled	41	36.30%	90	79.60%
Unbooked	72	63.70%	23	20.40%
Total	113	100%	113	100%

Table 3: Complications during pregnancy

Complications	Study Group	Percentage	Control Group	Percentage	P-Value
Hypertensive disorders of pregnancy	17	15%	2	1.80%	0
Preterm Delivery	21	18.60%	16	14.20%	0.369
Gestational Diabetes	9	8.00%	4	3.50%	0.269
Anaemia in pregnancy	2	1.80%	1	0.90%	0.561
Fibroid in pregnancy	2	1.80%	_	_	0.155
Cardiac disease in pregnancy	1	0.90%	_	_	0.316
Multiple pregnancy	3	2.70%	2	1.80%	0.651
Antepartum haemorrhage	7	6.20%	4	3.50%	0.354

Table 4: Outcome of Labour

Outcome Of Labour	*Study Group*	*Percentage*	*Control Group*	*Percentage*	*P-Value*
Caesarean delivery	47	41.60%	22	19.50%	0
Instrumental delivery	7	6.20%	4	3.50%	0.354
Assisted Breech delivery	5	4.40%	1	0.90%	0.001
Postpartum haemorrhage	38	33.60%	18	16.10%	0.002
Prolonged labour	11	9.70%	5	4.40%	0.342
Ruptured uterus	2	1.80%	-	-	0.155

Table 5: Fetal and Neonatal outcome

Fetal outcome	*Study Group*	*Percentage*	*Control Group*	*Percentage*	*P-Value*
Low birth weight	23	20.70%	13	11.70%	0.069
Birth asphyxia	6	9.40%	4	4.40%	0.221
Neonatal intensive care	18	15.90%	16	14.20%	0.71
Fetal distress	8	7.10%	5	4.40%	0.391
Perinatal death	13	11.50%	6	5.30%	0.093

Author Profile

Ayodeji A. Oluwole received his MBChB degree at the Ogun State University in 1992 and was awarded the fellowship of both the West African college of surgeons [FWACS] and National postgraduate medical college of Nigeria [FMCOG] in April and May 2004 respectively. He has been employed as a lecturer in the department of Obstetrics and Gynaecology, College of Medicine, University of Lagos and Honorary consultant at the Lagos University Teaching hospital, Idi-Araba, Surulere, Lagos, Nigeria since 2005 till date.