

Outcome of Pregnancy and Labour in the Nullipara

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Abstract

Context: Nulliparous women are reportedly at a higher risk of developing complications of pregnancy and delivery than multipara. There is a need to document the outcome of their pregnancy in order to improve the quality of care they receive.

Objectives: To find out problems associated with pregnancy and labour in the nullipara compared to their multiparous counterparts.

Subjects and Methods: The delivery records of 528 nulliparous women and 2980 multipara delivering singleton babies at Ogun State University Teaching Hospital, Sagamu from January 1988 to December, 1990 were retrieved and data about the socio-demographic and clinical characteristics of the patients were extracted for analysis.

Results: The mean age of the nullipara and the multipara were 21.2 (SD 3.5) years and 27.4 (SD 5.7) years respectively, a statistically significant difference ($p < 0.001$). The multiparae had a mean parity of 3.3 (SD 2.0). The nulliparae were significantly shorter (159.0cm; SD 6.1) than the multipara (160.7 cm; SD 1.3). The nullipara were more likely to have anaemia, preeclampsia, preterm births, prolonged second stage of labour, vacuum extraction and to give birth to lighter babies than the multipara (2.9 kg; SD 0.5) vs (3.1kg; SD 0.5). The multipara were at a higher risk of developing urinary tract infection in pregnancy, ante- and post-partum haemorrhage, fetal distress, retained placenta and perinatal mortality.

Conclusion: Both the nullipara and multipara are exposed to a variety of complications in pregnancy, which require prompt and adequate attention in order to forestall perinatal and maternal morbidity and mortality.

Key Words: Pregnancy, Parturient, Parity, Outcome. [Trop J Obstet Gynaecol, 2003, 20: 56-58]

Introduction

Nulliparous parturients are women having their first births. Naturally, these women tend to be anxious and apprehensive about the outcome of pregnancy and delivery. The importance of antenatal care and counselling in reducing this anxiety cannot be over-emphasised in adequately preparing these women for safe delivery^{1,2}. Nullipara, although known to be at a higher risk of developing some complications of pregnancy and labour than multipara should nonetheless not be classified as "high risk" except perhaps when other risk factors in pregnancy such as extremes of age, short stature, contracted pelvis and systemic illness are present^{3,4,5}. It is however still recognised that nulliparae need closer attention in pregnancy and labour than multiparae^{3,4,5,6,7,8}.

In the past three decades there has been major reorganisation and improvement in the provision of health care services around the world, especially in the developed countries. This, coupled with improved social and healthcare delivery services, have led to a remarkable improvement in the outcome of pregnancy and labour in women, even among those recognised as "high risk"^{3,9}. In spite of such remarkable achievements in the developed countries, sub-Saharan African countries are still faced with horrendous levels of maternal and perinatal morbidity and mortality because of the

multitude of social and economic problems besetting these countries.

The objectives of this study were to find out the problems associated with pregnancy and delivery in nulliparous women in our hospital and compare them with those confronting the rest of the hospital's obstetric population.

Subjects and Methods

Records of singleton pregnancies and deliveries of 528 nulliparous and 2980 multiparous parturients at Ogun State University Teaching Hospital, Sagamu between January 1988 and December 1990 were reviewed. Data on the age, height, antenatal complications, duration and outcome of labour, mode of delivery and the birthweights of the babies for the nullipara and the multipara were extracted for analysis and comparison. The nullipara were seen by a Senior Registrar or a Consultant during the course of their antenatal visits and by a Registrar or someone more senior during labour.

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Statistical Analysis

Student's t-test and chi-square test were used as tests of significance where appropriate with the level of significance set at $p < 0.05$.

Results

In the hospital during the study period, there were 539 and 3079 deliveries by nullipara and multipara respectively. There were 528 nulliparae who had singleton deliveries, 523 of which were live births. During the same period there were 2980 singleton deliveries with 2752 live births to multipara. There was 1 (189.4 per 100,000) maternal mortality among the nullipara compared to 27 (906.0 per 100,000) among the multiparous women. The nulliparae (159.0; SD 6.1cm) had a lower mean height than the multipara (160.7 SD 1.3cm), a difference that was statistically significant ($p < 0.0001$). There was no significant correlation between the incidence of prolonged/obstructed labour and maternal height.

In Table 1, distribution of maternal age and birth weight is reviewed. The mean age of the nullipara and multipara were 21.2 (SD 3.5) years and 27.4 (SD 5.7) years respectively a difference that was significant ($p < 0.001$). Infants born to be nulliparae were lighter in weight ($2.9 \pm 0.5\text{kg}$) than those born to multiparous women ($3.1 \pm 0.5\text{kg}$). This difference was statistically significant ($p < 0.001$).

Table 1

Maternal Age Distribution Related to Infants' Birthweights.

Maternal Age (years)	Nullipara N = 528	Multipara N = 2980
Age Distribution		
	<i>n (%)</i>	<i>n (%)</i>
15-19	192 (36.4)	214 (7.2)
20-24	236 (44.7)	693 (23.3)
25-29	90 (17.0)	1071 (35.9)
30-34	9 (1.7)	784 (26.3)
35 or more	1 (0.2)	218 (7.3)
Birthweight Distribution by Age Group		
	<i>Mean Birthweight (SD)</i>	<i>Mean Birthweight (SD)</i>
15-19	2.8 (0.5)	2.9 (0.4)
20-24	2.9 (0.5)	3.0 (0.6)
25-29	3.0 (0.5)	3.2 (0.6)
30-34	3.0 (0.5)	3.2 (0.5)
35 or more	2.5 (0.0)	3.0 (0.5)

Table 2 shows the modes of delivery of the parturients. The nulliparae had a higher incidence of vacuum extraction (14.8%) than the multiparous women (6.1%), a statistically significant difference ($p < 0.001$).

Table 2

Mode of Delivery

Mode of Delivery	Nullipara N = 528	Multipara N = 2980	<i>p</i>
	<i>n (%)</i>	<i>n (%)</i>	
Spontaneous Vertex	387 (73.3)	2387 (80.1)	<0.25
Vaginal Breech	13 (2.4)	117 (3.9)	<0.25
Vacuum Extraction	78 (14.8)	182 (6.1)	<0.001*
Caesarean Section	50 (9.5)	294 (9.9)	>0.50

Table 3 outlines the obstetric complications found to occur at significantly different rates in the two groups of patients. Perinatal Mortality Rates for the nullipara and the multipara were 47.3 and 88.3 per 1000 births respectively. Perinatal deaths occurred in 7.4% of nullipara and 14.8% of the multipara, a statistically significant difference ($p < 0.005$).

Table 3

Obstetric Complications in the Patients

Mode of Delivery	Nullipara N = 528	Multipara N = 2980	<i>p</i>
	<i>Frequency (%)</i>	<i>Frequency (%)</i>	
Anaemia in Pregnancy	17.8	5.4	<0.001
Pre-Eclampsia	7.4	3.6	<0.025
Eclampsia	2.1	0.8	<0.025
Preterm Birth	18.4	9.3	<0.001
Prolonged/Obstructed Labour	25.8	5.8	<0.001
Delayed 2 nd Stage	1.8	0.6	<0.025
Urinary Infection	0.6	2.5	<0.05
A.P.H.*	1.2	4.6	<0.01
P.P.H.**	0.9	5.4	<0.001
Fetal Distress	2.1	20.9	<0.001
Retained Placenta	0.6	3.9	<0.005

*A.P.H.: Antepartum Haemorrhage

**P.P.H.: Postpartum Haemorrhage

Discussion

Pregnancy and labour generally require special attention. More so, those designated as "high risk". Age and parity constitute two major parameters in the conduct and outcome of obstetric management. It has been well established that extremes of age and parity are major contributory factors to a high-risk status^{3,6,7,8,10}.

In this study, the pattern of pregnancy and labour complications differed significantly between the two parity groups. The nullipara recorded significantly higher rates of anaemia in pregnancy, pre-eclampsia, eclampsia, pre-term delivery, prolonged/obstructed labour and delayed 2nd stage of labour, while the multipara recorded significantly increased likelihood of developing ante- and post-partum haemorrhage, urinary tract infection, fetal distress, retained placenta and perinatal mortality.

The nullipara also recorded a significant higher rate of ventouse delivery, compared with the multipara. Infants born to nulliparae were significantly lighter in weight than their counterparts born to multiparous women. One would not be surprised that nulliparae in this series are significantly shorter than the control since they are significantly younger in age and many were still growing.

The first labour is a unique experience and it is usually accompanied by apprehension and anxiety in the parturient. When the first labour is not properly managed, it may lead into hasty and unnecessary operative intervention⁵, while undue prolongation of first parturition may also cause permanent damage to the women's personality². Women with negative expectations concerning labour and delivery tend to experience more intense pains during labour⁵. Pregnant women with previous painful deliveries were generally more anxious

about what the outcome of their pregnancy would be and more ambivalent towards motherhood. So prospect of prolonged labour is often a cause of serious concern during pregnancy.

Nulliparae are more predisposed to complications of pregnancy and labour since they are likely to be, younger, more likely to have an episiotomy or a deep perineal laceration, are at a higher risk of having symphysiotomy and other operative interventions, and less likely to have realistic expectations of the labour experience^{1,3,5,7,10}. Fridh and Gaston-Johansson⁵ reported in their study that nulliparae received significantly higher doses of pethidine and epidural anaesthesia than multiparae.

For some time now, with the improved state of healthcare services and overall social welfare in the developed countries, nullipara have had improved outcome of pregnancy and labour to a level comparable to that of other parity groups^{3,9}. In a study of an urban population in the United States of America⁹, pregnant nullipara at the lower limit of reproductive age (under the age of 15 years) were reported to have a normal course of labour, contrary to common belief and expectation. The situation in the communities of Sub-Saharan Africa like ours are, of course, different because of the prevailing socio-economic situation, the nutritional status of children and adolescents and the numerous political problems that directly affect the state of our healthcare and social services.

In conclusion, the findings from this study have shown that there are important differences in the pattern of complications encountered by nullipara and other parity groups during pregnancy and labour. These differences must be factored in when planning the programmes for the maternity care of these two groups of women.

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