Sociodemographic Characteristics of Anaemic Gravidae at Booking: A Preliminary Study at Ilesha, Western Nigeria

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ABSTRACT

Background: *Anaemia in pregnancy is a significant cause of direct and indirect morbidity and mortality to both the pregnant mother and her fetus. The prevalence however remains undetermined in many parts of Africa. The study aims at determining the prevalence of anaemia and sociodemographic characteristics of anaemic pregnant women in a Nigerian tertiary obstetric care centre.*

Methods: *A cross-sectional study involving all pregnant women that registered for ante-natal care between 1ˢᵗ January 2001 and 30ᵗʰ of June 2001 in Wesley Guild Hospital Unit of Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife.*

Results: *Prevalence of anaemia among the pregnant women during the period of study was 62.2%. Two percent of the women had severe anaemia. Parity and gestational age at booking significantly influenced the prevalence of anaemia.*

Conclusion: *Prevalence of anaemia among pregnant women in developing world is still unacceptably high, and it calls for improvement in standard of living for our pregnant women.*

KEY WORDS: *Anaemia; Pregnancy Age; Parity; Gestational age.*

INTRODUCTION

Anaemia is the commonest medical disorder affecting pregnancy[1]. It is seen in about 50% of pregnant women worldwide[2]. It is defined as haemoglobin concentration less than 11.0g/dl or PCV less than 33.0%[2]. Anaemia has been said to be the cause of maternal mortality in 9% of cases in Nigeria, 8% in Malawi, and 11% in Kenya[3]. It is also a significant risk factor for preterm delivery[4].

Babies born to anaemic mothers have been reported to have high risk of developing iron deficiency anaemia; they tend to have abnormal behaviour pattern with poor performance on the Bailey mental development index[5].

The issue of anaemia in pregnancy cannot therefore be trivialized. It is against this background that during the African Regional consultation on the control of anaemia in pregnancy, in Brazzavile, Congo, it was recommended that simple studies of prevalence and aetiology be undertaken for each region of Africa[6]. Unfortunately, about two decades afterwards, the prevalence of anaemia in many parts of Africa remains undetermined.

This study aims at determining the prevalence of anaemia and sociodemographic characteristics of anaemic pregnant women at booking in Wesley Guild Hospital (WGH), a University hospital serving the Ijesa Zone of western Nigeria.

MATERIALS AND METHODS

Study Area: The patients studied were drawn from Ilesha and it's environs. Ilesha is the capital of "Ijesha Kingdom". The Ijesas are Yoruba speaking people known for their long history of trading activities. However, the residents of Ilesha comprise of almost all the ethnic groups in the country due to the effect of net migration. Ilesha has a State General Hospital apart from the Teaching Hospital unit of Wesley Guild. These together with government comprehensive health centres and numerous private clinics and maternity homes (private and mission) help to meet the needs of pregnant women in the town. The 2002 estimated total population of Ilesha was 233,900[7].

Study Population: All consenting pregnant women that booked at WGH between January 2001 and June 2001 were the subjects of this study.

Study Design: This hospital-based study

was cross-sectional in design. It included pregnant women that booked between January 2001 and June 2001.Their packed cell volume was determined and information about their age, parity, gestational age at booking was also obtained. Anaemia in this study is taken as packed cell volume (PCV) of less than 33% (Haemoglobin (Hb) concentration <11g/dl) while severe anaemia is taken as PCV of less than 24% (Haemoglobin concentration < 7g/dl). This is in accordance with WHO definitions of anaemia in pregnancy[2]. Packed cell volume was used as opposed to haemoglobin concentration as this is what is routinely done in our centre.

Laboratory Methods: PCV was determined from a capillary blood sample (finger prick) with Sahel's micro haematocrit centrifuge and reader.

Statistical Analysis: Data analysis was by SPSS package version 9.0 Comparative analysis was done with Chi-Square test and level of significance was set at P<0.05.

RESULTS

A total number of 450 pregnant women booked during the six-month period. The prevalence of anaemia (Hb <11g/dl, PCV< 33%) was 62.2% and the prevalence of severe anaemia (Hb <7g/dl, PCV <24%) was 2.0%. Average PCV at booking of this pregnant population was 31.32% ± 3.89. The packed cell volume ranged from 19% to 43% among these women (Figure 1).

Age: Age of the pregnant women ranged from 15 to 45 years, with mean age of 27.56 ± 5.70. Modal age was 25 years. Percentage of anaemic women was inversely proportional to the age of the pregnant women (Table I). However, the observed difference between age groups and distributions of anaemia among pregnant women was not statistically significant ($x^2 = 2.1$, df = 2, P = 0.339).

Parity: The mean parity among the women studied was 1.30 ± 1.59. Modal parity was zero, with parity range of 0 to 9. Percentage of anaemic pregnant women reduced with increasing parity status, being highest amongst the nulliparous and lowest among the

grandmultiparous women (Table II). The observed difference was statistically significant ($\chi^2 = 9.75$, df = 2, P = 0.008).

Gestational age at booking: Mean gestational age at booking among the pregnant women studied was 23.68 ± 7.33 weeks; modal gestational age at booking was 24 weeks, the range being 8 weeks to 41 weeks.

Anaemia was higher among women booking after the first trimester (Table III) and the difference observed was statistically significant. ($x^2 = 22.45$, df = 1, P < 0.0001).
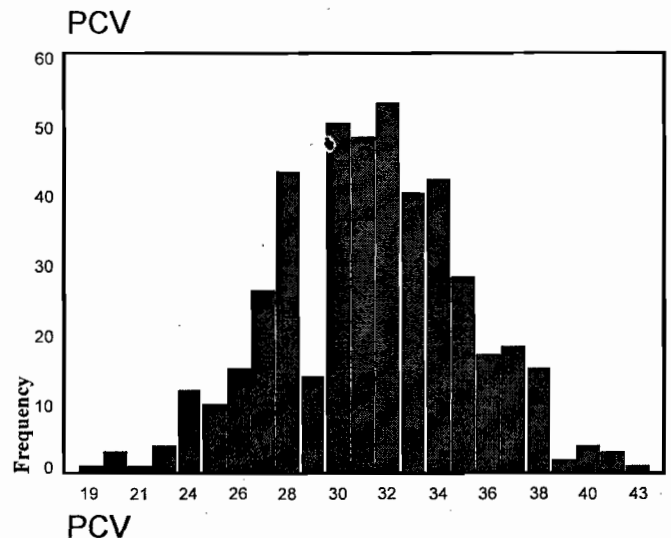

Fig 1. PCV distribution among pregnant women of WGH (n= 450)

Table I. Influence of age on anaemia in pregnancy (n= 450)

Age	No (% of total)	Percentage with anaemia	
(<20)	23 (5.1%)	74%	$\chi^2 = 2.1$
(20 to 35)	377 (83.8%)	62.3%	df = 2
(>35)	50 (11.1%)	56%	P = 0.339

Table II. Influence of Parity on anaemia in pregnancy (N = 4 5 0)

Parity	No (% of total)	Percentage with anaemia	P.Value= 0.008
(Para 0)	201 (45.1%)	67.2%	df = 2
(Para 1 - 4)	222 (49.8%)	60.4	
(Para < 5)	23 (5.1%)	34.8%	$\chi^2 = 9.75$

Table III. Influence of Gestational age at booking on anaemia in pregnancy (n = 450)

Class	No (% of total)	Percentage with anaemia	P. Value < 0.0001
I >13 weeks	28 (6.2%)	17.9%	df = 1
II <13 weeks	422 (93.8%)	64.7%	$\chi^2 = 24.45$

DISCUSSION

Prevalence of anaemia in pregnancy in Ijesa zone of western sub-region of Nigeria at booking in this study was shown to be 62.2% using WHO criteria of Hb concentration of <11g/dl. This is higher than the 56% quoted by WHO for prevalence of anaemia in Africa based on the 1988 data[8]. This implies that after 15years, the situation is worse. This is however comparable to 67.4% prevalence rate found in University of Nigeria Teaching Hospital (UNTH, Nigeria)[9], and 66% prevalence rate in Burkina faso[10]. Figures from other African Countries include 58% in Mozambique, 75.6% in Kenya and 57.1% prevalence rate in Malawi[11]. This may portend that the socio-economic status of most African women has remained poor and probably worse than what it used to be as mean packed cell volume of pregnant women in the population at booking is said to be a reflection of their nutritional status[12]. Percentage of severe anaemia found was 2%. This is within the 1% to 5% range quoted by WHO[8] but less than 9.8% for Kenya and 7.0% for Tanzania[13]. This might mean that prophylactic treatment for malaria in pregnancy, which is an important cause of severe anaemia[13] is perhaps yielding good dividend in Nigeria.

Proportion of anaemia in pregnancy was inversely related to age of the pregnant women, being highest among adolescents. This is probably because many of the adolescent pregnant women are still growing actively and thus unable to meet the demand for essential nutrients required for growth and pregnancy; many of them are poorly supported in this age group. Susceptibility to frequent malaria attack which is pronounced among primigravidas could also be a contributing factor, although only 4.6% of the adolescents in this study were primigravidas. The observed difference in percentage of anaemic women among the age groups however was not statistically significant. This was also the finding of Van den Broek et al [11] in Southern Malawi.

Like age, the relationship between parity and anaemia was that of an inverse relationship. However the observed difference in percentage of anaemic patient among the parity groups was statistically significant (P = 0.008) showing that parity is significantly and independently related to anaemia. This corroborates the earlier funding of Van den Broek et al [11]. Notable finding here however is that grandmultiparity contrary to general teaching and finding in past studies[13] is not a risk factor for anaemia. The socio-economic status of the grandmultiparous women in this study probably played a significant role.

Percentage of anaemic women was lowest among women who booked in the first trimester. The dilutional effect of pregnancy and demand for blood forming elements is maximal after the first trimester. Booking in the first trimester will give room for prevention and /or early treatment of anaemia. The difference in percentage of anaemic women in relation to gestational age at booking was statistically significant (P<0.001). This is in agreement with finding of Ogbeide et al[14] in Benin, Nigeria and Van den Broek et al[11] in Southern Malawi.

CONCLUSION

The prevalence of anaemia is still unacceptably high especially among low parity pregnant women in Ilesha, Western Nigeria. This is probably a reflection of the picture in the African sub-region. Adolescent pregnancy should be discouraged. When it occurs, adequate support should be given to prevent and treat anaemia. Women should be encouraged to commence ante-natal care within the first trimester of pregnancy. Women preparing for their first pregnancy should be assessed in the pre-pregnancy clinic to be in the best nutritional status possible before embarking on pregnancy. The standard of living of women in the African sub-region needs to be improved.

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