■ **Original Research Article**

Evaluation for breast diseases in pregnant women attending antenatal clinic in National Hospital, Abuja - Nigeria

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ABSTRACT

Background: Ante-natal care is a good screening point for various diseases in women including breast conditions. ***Objective:*** The study was done to evaluate for breast diseases among pregnant women attending antenatal clinic of National Hospital, Abuja. **Methods:** This was a cross-sectional study involving antenatal clinic attendees at the National Hospital, Abuja. Clinical based examination and breast ultrasonography were done at the antenatal booking clinic between 16-26 weeks gestational age (based on Last menstral period) in consenting pregnant women. Fine needle aspiration cytology (FNAC) was done in women with breast mass on clinical breast examination, breast ultrasonography or both to determine the characteristics of the mass. **Results:** Sixty four pregnant women who met the inclusion criteria for the study were recruited. The age of the patients ranged from 20-42 years, with a mean gestational age at recruitment of 21 weeks and 4 days. A total of three masses (4.7%) (two solid and one cystic) were detected in the antenatal period. All solid masses were detected by both clinical breast examination and breast ultrasound scan while the cystic mass was detected by breast ultrasound scan. Fibroadenomas were detected on FNAC. **Conclusion:** Breast diseases can occur during pregnancy. Examination of the breast as part of antenatal care will help in early detection of breast lesions and management.

Keywords: clinical breast examination, breast ultrasonography, pregnant women, breast mass, Nigeria.

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Introduction

Ante-natal care is a good screening point for various diseases in women including breast diseases. Various conditions including aberrations of normal development and involution (ANDI) affect the breast. The significance of this study is

because there is increased incidence and consequences of delay in diagnosis of pregnancy associated breast cancer. Evaluation and ruling out Pregnancy Associated Breast Cancer (PABC) is very important because its more aggressive and prognosis is time-dependent. Current antenatal care routines entail clinical breast examination which might result in low detection rates because of changes in pregnancy,[1] hence the need for complimentary ultrasound scan for complete evaluation. The justification of this study is that early detection and institution of appropriate management will lead to decrease in morbidity and mortality associated with pregnancy associated breast cancer and reassure patients with benign conditions. The findings from this study may help in policy formulation on the best ways of breast cancer screening in our environment.

The study was done to evaluate for breast diseases among pregnant women attending antenatal clinic of National Hospital, Abuja.

Methodology

- **Setting**

The study was conducted at the Ante-natal clinic of National Hospital, Abuja between May 15, 2018 to February 22, 2019. The study site is a tertiary institution in the capital city of Nigeria with referrals from neighbouring states.

- **Methods**

This was a cross-sectional study involving antenatal clinic attendees at a tertiary hospital, Abuja. A structured questionnaire was administered and clinical based examination and breast ultrasonography were done at the antenatal booking clinic in women who met the inclusion criteria (Gestational age between 16-26 weeks based on Last Menstrual Period and those who gave informed written consent).

Sample size was calculated based on the formula for estimating sample size for prevalent studies:[2]

$$N = \frac{Z^2 P(1-P)}{d^2}$$

N = minimum sample size

Z = standard normal deviation at 95% confidence level (1.96)

P(3) = expected prevalence or proportion of the population possessing the desired characteristic (0.039 from incidence of 3.9%).

D = degree of accuracy needed or precision (0.05 using 95% confidence interval.

Therefore, $n = \dfrac{(1.96)^2 (0.039)\,(1\text{-}0.039)}{(0.05)^2}$

$= \dfrac{3.84 \times 0.039 \times 0.961}{0.0025}$

$= 58$

adding an assumed attrition rate of 10%, the calculated sample size was 64.

Fine needle aspiration cytology was done in women with breast mass on clinical breast examination, breast ultrasonography or both to determine the characteristics of the mass.

Patients that presented for Ante-natal booking had routine health talk and examination as in the protocol of the Department. In addition, a complete breast examination was done. A complimentary breast ultrasound scan was undertaken by grid scanning and power Doppler for vascularity. Clinically suspicious breast masses were subjected to fine needle aspiration cytology (FNAC) for definitive diagnosis.

- **Data analysis**

The result was collated and data analyzed using descriptive statistics with P value <0.05 at 95% confidence interval, regarded as statistically significant. This was with the aid of Statistical Package for Social Sciences (SPSS) version 22.

- **Results**

A total of sixty four pregnant women who met the inclusion criteria for the study and gave

informed consent were recruited. The age of the patients ranged from 20-42 years with a mean Age of 32.1 ± 5.34 standard deviation (SD). The mean gestational age at recruitment was 21 weeks and 4 days. 81.3% have tertiary level of education, 17.2% have secondary level of education and only 1.6% had primary education. Nineteen (29.7%) were of Igbo ethnic group, ten (15.6%) were Hausa, nine (14.1%) Yoruba, and twenty six (40.6%) were of other ethnic groups which included; Ebira, Kanuri, Igala and Edo. In terms of the occupational status of the study population, business women and Full time Housewives accounted for nineteen women (29.7%) each, civil servants accounted for eighteen women (28.1%) while professionals were eight in number (12.5%) which were the minority. Thirty patients (46.9%) were multiparous (2-4), Ten (15.6%) were primigravidae and only

one (1.6%) was a grandmuliparous woman. This is shown in Table I.

Screening for breast masses was done using clinical breast examination and breast ultrasound scan. A total of three masses (4.7%) (two solid and one cystic) were detected in the antenatal period. All solid masses were detected by both clinical breast examination and breast ultrasound scan while the cystic mass was detected by breast ultrasound shown in Table 2.

Table 3 shows the dimension of the masses. Three lesions were detected in three patients during the antenatal period using high frequency ultrasound scan.

Fine Needle Aspiration Cytology (FNAC) was used for histological diagnosis of the masses detected and they were all found to be fibroadenoma.

Table 1: Socio-Demographic Characteristics of Pregnant Women Attending Antenatal Clinic

Parameters Age (years)	Frequency	Percentages
20-24	5	7.8
25-29	19	29.7
30-34	15	23.4
35-39	21	32.8
>40	4	6.3
Educational Status		
Primary	1	1.6
Secondary	11	17.2
Tertiary	52	81.3
Tribe		
Igbo	19	29.7
Yoruba	9	14.1
Hausa	10	15.6
Others	26	40.6

Occupation		
House wife	19	29.7
Business woman	19	29.7
Civil servant	18	28.1
Professional	8	12.5
Parity		
0	10	15.6
1	23	35.9
2-4	30	46.9
>4	1	1.6

Table 2: Detection of Breast Masses Using Clinical Breast Examination and Breast Ultrasonography

Method of Breast Exam	Solid	Cystic	Normal	Total
Clinical Exam	2 (3.1%)	0	62 (96.9%)	64 (100%)
Breast USS	2 (3.1%)	1 (1.6%)	61 (95.3%)	64 (100%)

Table 3: The Dimension of the Detected Breast Masses

Type of Mass	CBE			ULTRASOUND SCAN		
	<1cm	1-2cm	3-4cm	<1cm	1-2cm	3-4cm
Cystic mass	0	0	0	1	0	0
Solid mass	0	1	1	0	1	1

Discussion

The age range of patients in this study is 20-42 years with mean age of 32.1 ± 5.34 years. This is similar to age range of 20-42 with mean age of 31.62 ± 9.27 years reported by Shah T et al at Nepal.[1] This is also similar to 16-46 years reported by Odedina et al[4] at Ibadan with a mean age of 29.7 ± 5.2 years.

Their educational status was tertiary level of education in the majority of cases (81.3%) which is similar to what was reported by Ezeonu et al at Abakaliki.[5] The high level of education may be related to the study site which is located in the Federal Capital Territory (FCT) with majority of the participants being urban dwellers, civil servants, and achieved tertiary level of education. This is however, not similar to what was found in Ibadan, where majority achieved only secondary level of education. The Ibadan study included primary health care centre where majority of the patients were rural dwellers.[4]

Nineteen (29.7%) were of Igbo ethnic group, ten (15.6%) were Hausa, nine (14.1%) Yoruba, and twenty-six (40.6%) were of other ethnic groups

which included; Ebira, Kanuri, Igala and Edo. This is a reflection of the cosmopolitan nature of the study centre compared to other studies by Odedina et al[4] and Ezeonu et al[5] where most study participants were of African heritage with majority from Yoruba (92.4%) and Igbo (80.1%) ethic groups respectively.

Similarly, most of the patients are full time housewives and business women. Same was obtained in the study at Abakaliki,[5] and this is like other studies in Nigeria. The study also showed majority of the participants were multiparous women. Similar studies in Nigeria,[4,5] also showed same likely because procreation is given so much importance in this part of the world as a childless woman is considered a social outcast.

The prevalence of breast masses in pregnancy detected by clinical breast examination in this study was 3.1%. This was lower than 4.8% reported in Ghana(6) which could be as a result of high sample size of 1419 premenopausal women and 11.9% reported at Ibadan[4] probably due to use of Mammacare techniques which has been scientifically validated for clinical breast examination and has been proven to detect lumps as small as 0.3cm.[7] However, it is higher than 1.3% reported in Sudan by Abuidris et al[8] in a house to house breast screening pilot survey. The low prevalence reported in the Sudan study may be due to the low number of participants.

A rise in the incidence of breast disease in Nigeria has also been reported[9] and the incidence is likely to increase due to increase in breast cancer awareness.

A slight left laterality of breast disorders was found in this study. This is similar to the study in Ibadan by Odedina S. O et al.[4] However, a study at Ile-Ife reported a right sided preponderance of benign breast disease, but they did not indicate whether it was found in pregnancy or not.[10]

In this study, Fibroadenoma was the commonest breast mass found among the pregnant women. This is similar to what was found by Odedina SO et al (4), Ezeonu et al,[5] and Spain.[11] According to Bell et al,[12] fibroadenoma was the most common benign solid lesion that grows during pregnancy and breastfeeding due to increase hormones, however, galactocele was found to be the commonest during lactation. Several studies have widely reported fibro-adenoma to be the commonest in young women[13,14,15,16] while some studies in Lagos and Maiduguri found it to be the second commonest benign breast lesion.[9,17]

In conclusion, Breast diseases can be detected during pregnancy. Confirmation of diagnosis and serial physical examinations are the appropriate course of management during pregnancy. A fine needle aspiration biopsy can be performed during pregnancy to confirm diagnosis.

Disclosure

The authors report no conflicts of interest in this work.

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