Original Article

International Journal of Dental and Health Sciences
Volume 03,Issue 04

ULTRASOUND DIAGNOSED PREGNANCY LOSS AT A TERTIARY HEALTHCARE INSTITUTION IN NORTH CENTRAL, NIGERIA

Abubakar A[1]., Nkubli F.B[2]., Ibrahim Fatima Zarah[3], Usman A.U[4] , Nwobi I.C[5], Luntsi G[6]

1. Department of Medical Radiography, University of Maiduguri
2. Department of Medical Radiography, University of Maiduguri
3. Department of Radiology, Federal Medical Centre Keffi
4. Department of Radiology, Federal Teaching Hospital Gombe
5. Department of Medical Radiography, University of Maiduguri
6. Department of Medical Radiography, University of Maiduguri

ABSTRACT:

Aim: This study was aimed at evaluating the prevalence of intrauterine foetal demise and abortion in a tertiary healthcare institution in North central Nigeria.

Materials and Methods: A total of three thousand eight hundred and nineteen (3819) obstetrics scan cases within the period of five years from 2009 to 2014 were reviewed retrospectively at Federal Medical Center Keffi, Nasarawa, Nigeria. All the patients were scanned using Sonoscape ss-5000 ultrasound equipment with curvilinear probe of 3.5 MHz using trans-abdominal approach. Patients' demographic data, clinical history as well as findings retrieved were recorded on data capture sheet. The data were analysed using statistical package for social sciences (SPSS) version 16.0. Frequency and percentages for IUFD cases and different types of abortions were generated

Results: A total of 3819 obstetrics scan records were included in this study. The maternal age range was 17 to 57 years with a mean age of 29.2years.The most common maternal age group affected was 23-28yeas. Out of the total number of cases reviewed, only 8.1% (n=312) were cases of pregnancy loss (IUFD and abortion). The cases of IUFD alone constitutes only 1% (n=40) of the total number of cases reviewed and 12.8% of pregnancy loss. Cases of abortion accounted for 7.1% (n=272) of the total population and 87.2% of the total cases of pregnancy loss.

Conclusion: The prevalence of pregnancy loss in this locality was 8.1% which is on the high side relative to that found in developed countries and it occurs among women in their late 20s.

Key word: IUFD, Abortion, pregnancy loss, ultrasound

INTRODUCTION:

Intrauterine foetal death (IUFD) and abortion are amongst the common types pregnancy loss diagnosed sonographically. IUFD refers to foetus with no evidence of life in utero at gestational age later than 20 weeks while abortion is the termination of gestation before the end of the 28th week of pregnancy.[1] Pregnancy loss either in form of abortion or IUFD remains among the unhappy events in obstetrics practice and thus one of the areas where improvement is required. The major problem facing the obstetrician is identification of women at risk as many cases seem to occur in the absence of risk factor.[2]

*Corresponding Author Address:-Auwal Abubakar Email: a.abubakar@unimaid.edu.ng

The risk of IUFD was reported as 1 in 60 pregnancies.[3] An issue of serious concern is that most of the predisposing factors of IUFD remain unknown.[4] However, it has been envisaged that congenital anomalies increases the risk of IUFD.[5] High incidence of IUFD of the order of 12.5% has been recorded amongst pregnancies affected by gatroschisis.[6] Also, it has been hypothesised that Oligohyramnious and umbilical cord compression following acute intestinal dilation increases the risks of IUFD.[7] Other factors include; cytokine-mediated inflammation[8,9] and hypovolemia secondary to cardiovascular compromise associated with high protein loss through the defect.[10]

Globally, about 40-50 Million abortions occur annually and nearly half of these are unsafe. In Nigeria, out of the 6.8 Million pregnancies that occur annually, 16% end in spontaneous miscarriage and 11% as induced abortion.[11] The prevalence of IUFD and abortion as seen on ultrasound has been reported in several studies and this varies in different localities. This prevalence has shown to be low in developed countries than developing and underdeveloped countries.[12,13] In addition, a meta-analysis study reported that the pooled prevalence of IUFD as 4.48 per 100 deliveries. This same study also reported that the pooled prevalence of IUFD at greater than 36weeks gestation was 1.28/100 births. In Nigeria, Oguntonyinbo reported incidence of 10.7% cases of non viable pregnancies including missed abortion, blighted ovum and early IUFD at Ilorin, north Central part of the country.[14] Also, an incidence of 1.69% was reported for IUFD lone in north-eastern Nigeria.[14] Owing to these facts, it is imperative to establish the rate of pregnancy loss in different localities as it varies from region to region.

Thus, the aim of this study was to determine the prevalence of pregnancy loss in form of IUFD and abortion diagnosed on ultrasound in a Tertiary Health Care Institution in, North central, Nigeria.

MATERIALS AND METHODS:

A total of three thousand eight hundred and nineteen (3819) consecutive patients referred for obstetrics scan were reviewed retrospectively. The study was conducted at Federal Teaching Hospital Keffi, Nasarawa,North Central Nigeria., The cases reviewed were those referred from the antenatal clinic for obstetrics USS within 5year period, from July, 2009 to June, 2014. This was retrieved from ultrasound scan record book of the department. All the patients were scanned using Sonoscape ss-5000 ultrasound equipment with curvilinear probe of 3.5 MHz. The patients were scanned either by consultant radiologist or Resident radiology doctor. Patients' demographic data, clinical history as well as findings retrieved were recorded on a structured data capture sheet. Only obstetrics cases with complete information were considered for inclusion in the study. Non obstetrics

cases and those with missing relevant information, numbering 3235 were excluded. The data was analysed using Statistical Package for Social Sciences (SPSS) version 16 manufactured by spss inc.233 south wacker Drive 11th floor Chicago, IL 60606-64

RESULTS:

A total number of 3819 obstetrics scan records were included in this study. The maternal age range was 17 to 57 years with a mean age of 29.2years. Out of the total number of cases reviewed, only 8.1% (n=312) were cases of pregnancy loss (IUFD and abortion). The cases of IUFD alone constitutes only 1% (n=40) of the total number of cases reviewed and 12.8% of pregnancy loss. Table 1 shows age distribution of IUFD cases based on maternal age. Cases of abortion accounted for 7.1% (n=272) of the total population and 87.2% of the total cases of pregnancy loss. Various forms of abortion identified were shown in table 2. Additionally, table 3 shows frequency distribution of abortion based on maternal age.

DISCUSSION:

Pregnancy loss either abortion or IUFD is a distress to the family involved and hospital at large. Despite advances in medical science, diagnostic and therapeutic modalities, pregnancy loss still occurs at a high rate most especially in under developed and developing countries. Although prenatal mortality has reduced over the few decades, the loss of pregnancy is still high. The results or findings from imaging studies, particularly ultrasound scans are expected to confirm a clinician's impression and eliminate errors in diagnosis of non viable pregnancy. Ultrasound is hazard free and cost-effective investigation and remains first line of investigation in suspected cases of foetal demise.

The Present study revealed that 1% obstetrics scan findings were IUFD. This finding is in agreement with the findings of Nwobi *et al*.[15] in North Eastern Nigeria which shows that the prevalence of IUFD was 1.69%. These findings were somehow similar conceivably because both study area are located in Northern Nigeria though different geopolitical zones. It could be owing to the facts that the two localities have the same life style and availability of medical facilities and personnel which could affect the rate at which pregnancy loss occurs.

The case of abortion in this study was 7.1% while total pregnancy loss was 8.1%. This is similar to the findings of a study conducted by Ogontoyinbo and Aboyeji.[14] in Ilorin, North Central, Nigeria which reveals that cases of pregnancy loss amounted to 10.7%. In contrast, this finding is different from the study of Tong *et al*.[16] in Australia where abortion prevalence was as low as 1.6%. When Comparing these two studies, our finding is on the high side possibly due to environmental factors such as, level of education, infrastructure and availability of state-of-earth healthcare facilities as well as

health care inequality that exist between developed and developing countries. Most of these factors are either poor or in adequate in most Nigerian healthcare institutions as compared to that of a developed country like Australia.

Furthermore, the current study is in good agreement with a similar study conducted by Okeudo *et al*.[17] in Imo State, South East, Nigeria in which the most frequent maternal age group at which pregnancy loss cases were diagnosed was 26 - 30 years. This could be attributed to the facts that women in these localities mostly get married and conceive within this age group range. In addition, those few that were not oppurtuned to be married, get involve in an intimate relationship which often leads to an unwanted pregnancies which in most cases ends in abortion. Above 40 years most women retire from giving birth and most a times uses contraceptives, thus the possible reason for the low occurrence of IUFD and abortion.

Incomplete abortion was the commonest form of abortion identified in this study. This agrees with the finding of Buowari *et al*.[18]. This could be due to high level of illegal induced abortions associated with unwanted pregnancies that occur outside marriage. This may leads the patient to seek for abortion by all means. The desperation to get rid of the pregnancy usually leads them to fall victim in the hands of illegal practitioners and end up having an incomplete abortion. As a preventive measure, we therefore recommend that effort should be made to improve antenatal care through awareness to encourage women to attend antenatal care and seek proper medical care at all times.

Limitation: This research was a retrospective study and thus, data collected were limited to the available information. We were not able to establish the common risk factors and causes of the pregnancy loss in this community.

CONCLUSION:

In conclusion the prevalence of abortion and IUFD which are the commonest forms of pregnancy loss established in this study. This finding is similar to other studies carried out in other locations in Nigeria, but much higher compared to the values from developed countries. Among the various forms of abortions identified in this study, incomplete abortion was the most prevalent and this is seen more commonly among patients in their late 20s.

REFERENCES:

1. Skandan A. P., Weerkkody Y., 2014, Missed Miscarriage, Radiopedia articles available online at http://radiopedia.org/articles/missed-

misscarriage-2 (accessed on 30-03-2014)
2. Gorge C.The Management of Early Pregnancy complications. Best practice and Research. Clinical Obstetrics and Gynaecology. 2004;18(1), 377-57
3. Danielson K. Making Sense of Miscarriage: miscarriage Pregnancy Loss website available online at http://miscarriage.about.com/od/riskfactors/a/miscarriage¬-satistics.htm (accessed on 01-04-2014)
4. South AP, Stutey KM, Meinzen-Derr J. Meta-analysis of the prevalence of intrauterine fetal death in gastroschisis. Am J Obstet Gyneco. 2013;209(2):114.e1-13.
5. Dolk, Helen, Maria Loane, and Ester Garne. The prevalence of congenital anomalies in Europe. Rare diseases epidemiology. Springer Netherlands, 2010. 349-364.
6. Crawford RA, Ryan G, Wright VM, Rodeck CH. The importance of serial biophysical assessment of fetal wellbeing in gastroschisis. BJOG. 1992;99(11):899-902.
7. Sapin E, Mahieu D, Borgnon J, Douvier S, Carricaburu E, Sagot P. Transabdominal amnioinfusion to avoid fetal demise and intestinal damage in fetuses with gastroschisis and severe oligohydramnios. J Pediatr Surg. 2000; 35(4):598-600.
8. Luton D, De Lagausie P, Guibourdenche J, Oury JF, Vuillard E, Sibony O et al, Prognostic factors of prenatally diagnosed gastroschisis. Fetal Diagn Ther. 1997;12(1):7-14.
9. Guibourdenche J, Berrebi D, Vuillard E, de Lagausie P, Aigrain Y, Oury JF, et al, Biochemical investigations of bowel inflammation in gastroschisis. Pediatr Res. 2006; 60(5):565-8.
10. Carroll SG, Kuo PY, Kyle PM, Soothill PW. Fetal protein loss in gastroschisis as an explanation of associated morbidity. Am J Obstet Gyneco. 2001;184(6):1297-301.
11. Kalu C. A., Umeora O. U, Sunday-Adeoye I.,. Review of Post-Abortion Care in South-Eastern Nigeria.African Journal of Reproductive Health. 2012; 16(1): 106
12. Cousens S, Blencowe H, Stanton C, Chou D, Ahmed S, Steinhardt L, et al, National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. The Lancet. 2011; 377(9774):1319-30.
13. Fretts, Ruth C. "Etiology and prevention of stillbirth." Am J Obstet Gyneco. 2005;193(6): 1923-1935.
14. Oguntoyinbo, A. E., and A. P. Aboyeji. Clinical pattern of gynecological/early pregnancy complaints and the outcome of pelvic sonography in a private diagnostic center in Ilorin. Nigerian journal of clinical practice.2005; 14(2): 223-227.
15. Nwobi IC., Ugwu AC., ABUBAKAR A., Zainab M. Pattern of obstetrics sonographic request and findings at University of Maiduguri Teaching Hospital. European journal of scientific research.2011;37(1):29
16. Tong S, Kaur A, Walker SP, Bryant V, Onwude JL, Permezel M. Miscarriage risk for asymptomatic women after a normal first-trimester prenatal visit. Obstetrics & Gynecology. 2008;111(3):710-4.
17. Okeudo C, Ezem BU, Ojiyi EE. Stillbirth Rate in a Teaching Hospital in South. Eastern Nigeria: A Silent Tragedy. Annals of medical and health sciences research. 2013;2(2):176-9.
18. Buowari D. Pattern and outcome of gynaecological examination at a Nigerian Secondary Health care centre.

The internet Journal of Tropical Medicine. 2010;6(2):7

TABLES:

Table 1 Foetal and Maternal Age Distribution for IUFD Cases

Foetal age(months)	Maternal age (years)					
	17-22	23-28	29-34	35-40	41-46	Total
30-33	5(12.5%)	5(12.5%)	9(22.5)	5(12.5%)	0	24(60%)
34-37	1(2.5%)	3(7.5%)	3(7.5%)	1(2.5%)	2(5%)	10(25)
38-42	1(2.5%)	1(2.5%)	2(5%)	2(7.5%)	0	6(17.5)
Total	**7(17.5%)**	**9(22.5%)**	**14(40%)**	**8(22.5%)**	**2(5%)**	**40(100%)**

Table 2 Frequency Distribution of Various Types of Abortion

Type Abortion	Frequency	Percentage
Incomplete abortion	141	51.8
Inevitable abortion	13	4.7
Threaten abortion	30	11.1
Complete Abortion	24	8.8
Missed abortion	64	23.5
Total	**272**	**100**

Table 3 Frequency Distribution of Abortion Based on Maternal Age

Maternal age	Frequency	Percentage
17-22	34	13
23-28	110	40
29-34	73	27
35-40	55	20
Total	**272**	**100**