Original Article

Gynaecological emergencies seen in a referral hospital in Northwest Nigeria: A 3-year retrospective study

Idris U Takai, Ifesinachi J Omeje

Department of Obstetrics and Gynaecology, Bayero University/Aminu Kano Teaching Hospital, Kano, Kano State, Nigeria

ABSTRACT

Background: Gynaecological emergencies are common causes of morbidity and mortality worldwide and patients' characteristics are important determinants of gynaecological emergencies.

Objectives: This study was conducted to determine the pattern and management outcome of gynaecological emergencies in Aminu Kano Teaching Hospital (AKTH), Kano.

Materials and Methods: A 3-year retrospective review of all gynaecological emergencies seen in AKTH between January 2012 and December 2014 was done.

Results: A total of 3050 gynaecological consultations were done within the period under review, 1337 of which were gynaecological emergencies giving an institutional prevalence of 43.8%. The highest (44.5%) frequency was seen in the 21–30-year age group. Ten different types of gynaecological emergencies were seen with abortion being the leading (59.3%) gynaecological emergency. Incomplete abortion is the most common form of miscarriage in age's ≥ 20 years; in the Parous; and amongst married women. Sexual assault occurred in 5% of the patients, with 47.8% occurring in individuals aged below 10 years. The least common gynaecological emergency was coital laceration which accounted for 0.5%. The prevalence of mortality from gynaecological emergencies was 3.7%. The most common cause of mortality from a gynaecological emergency was bleeding gynaecological malignancy and carcinoma of the cervix accounting for 41.2%.

Conclusion: Gynaecological emergencies are common and abortions are the most common emergency at AKTH. Patient characteristics play a significant role in their pattern of presentation, while outcomes of these emergencies are related to their cause and manner of presentation. Increased surveillance and advocacy of policies that strongly punish individuals convicted of sexual assault should be encouraged, and increased awareness and utilization of Pap smear should be encouraged for early detection of premalignant and early stage carcinoma of the cervix. Further research is required to identify the possible risk factors/causes of abortion in this environment.

Key words: Aminu Kano Teaching Hospital; gynaecological emergency; pattern; review.

Introduction

Women have been described as 'complex beings'. This may not be unrelated to the anatomy of the female genital tract. The female reproductive system is vulnerable to dysfunction or diseases from infancy to old age;[1] hence, women carry health risks and hazards linked with sexual and reproductive function.[1] This dysfunction, if not properly managed, can be a cause of morbidity and even mortality.

Address for correspondence: Dr. Idris Usman Takai, Department of Obstetrics and Gynaecology, Bayero University/Aminu Kano Teaching Hospital, Kano, Kano State, Nigeria.
E-mail: takaiidris@yahoo.co.uk

Access this article online	
Website: www.tjogonline.com	Quick Response Code
DOI: 10.4103/TJOG.TJOG_21_17	

How to cite this article: Takai IU, Omeje IJ. Gynaecological emergencies seen in a referral hospital in Northwest Nigeria: A 3-year retrospective study. Trop J Obstet Gynaecol 2017;34:XX-XX.

Gynaecological disorders are a particularly common cause of morbidity and mortality among women of reproductive age groups, and are a common cause of hospital presentation and admission in both developing and developed countries of the world.[1-4] They can be classified as acute (emergency) or chronic depending on the time of presentation and urgency of the need for medical care.[3,4] It is referred to as an emergency when a woman's life is at immediate jeopardy.[4]

Common gynaecological emergencies documented in the literature include abortion which constitutes a major cause of maternal morbidity and mortality worldwide, particularly in less developed countries; ectopic pregnancy, one of the most common surgical gynaecological emergencies, has been reported to be as high as 74.8% in a study from Kano.[5] Acute pelvic inflammatory disease (PID), complicated ovarian cyst and hydatidiform moles are also relatively common. The less common ones are sexual assault, which is any form of non-consensual sexual act;[4] bleeding gynaecological malignancies, coital laceration and pelvic sepsis.[4-6] Menstrual disorders, which are most common in extremes of reproductive ages, have also been reported to account for 3.5% of gynaecological admissions in AKTH.[7]

Environmental factors seem to be the most important factor in the pathophysiology of most of these gynaecological disorders, where cultural beliefs, religion and moral values of a society play a significant role.[1-2] The effect of these environmental factors is the greatest among women living in poverty stricken societies[1] as they are most likely to be deprived, abused and burdened with customs, traditions and physical labour along with their adverse health effects.[1] For example, in developing countries, ectopic pregnancy and miscarriages are the most common gynaecological emergencies, whereas in the USA, where better diagnostic facilities abound and demand for healthcare is much higher, PID is the most common gynaecological emergency.[4]

The overall outcome of gynaecological emergencies varies and may depend on the aetiology and presentation.[7-9] When response is prompt and adequate, outcome is generally good.[8] In Kano,[10] almost all deaths from gynaecological diseases were from bleeding gynaecological malignancies accounting for 71.4% of the cases, and the leading cause (33.2%) was cancer of the cervix.[10]

There have been little or no reports on the pattern of presentation and management outcomes of gynaecological emergencies in Kano. This study aims to assist in hospital planning relating to gynaecological emergencies, and will also help in generating data that will be indispensable in formulating policies relating to women's health and rights, which are central to the growth of any nation.[1] Achieving significant level of women's health requires knowledge of disease patterns in this population subgroup, particularly in Nigeria where actual health data is sparse[1] and mostly extrapolative.[4] Hence, this study aims to bridge this gap in knowledge. This study was conducted to determine the pattern and management outcome of gynaecological emergencies in AKTH, Kano.

Materials and Methods

This was a 3-year retrospective study of all gynaecological emergencies seen in AKTH Kano between January 2012 and December 2014. Research and ethics committee of the hospital approved the study. All women who attended the gynaecology emergency clinic within this period were identified from the gynaecological register. Patient details were obtained from this register. Using these, case notes were retrieved from the health records department, and the relevant data were extracted, including sociodemographic characteristics (age, parity, marital status, ethnic group and occupation). Data regarding diagnosis and outcome were also collected. Those with incomplete data were excluded. Data were recorded on a proforma (spreadsheets) using Microsoft excel for MAC 2011 and analysed using SPSS version 20, (SPSS inc., Chicago, IL, USA 2011). Data on the leading gynaecological emergencies, including abortion, ectopic pregnancy, menstrual disorders and sexual assault, were regrouped to obtain corresponding socio-demographic characteristic of patients with these emergencies. Simple descriptive statistic was used where appropriate and chi square test was used to identify association between different gynaecological emergencies and patients' characteristics. *P* value <0.05 was considered as statistically significant. Results are presented in tabular forms.

Results

A total of 3050 gynaecological consultations were done within the period under review, 1337 of which were gynaecological emergencies. The prevalence of gynaecological emergencies was 43.8% of the cases. Patients' age ranged from 3 to 70 years with a mean age of 28.31 years, (SD = ±9.3). A total of 926 case files with complete information were analyzed. Thirty-four mortalities were recorded during the study period, putting mortality rate from gynaecological emergencies at 3.7%. Bleeding gynaecological malignancies accounted for 94.1% of all the mortalities, out of which carcinoma of the cervix accounted for 41.2%.

Table 1 shows the socio-demographic characteristics of patients with gynaecological emergencies. Approximately

two-thirds (70.2%) of gynaecological emergencies were seen in women between 21 and 40 years of age, and more than half (55.0%) gynaecological emergencies were seen in para 1 to 4. It was most common among married women (80.5%), the Hausa–Fulani ethnic group (80.5%), and housewives (64.3%).

Table 2 details the types of gynaecological emergencies seen in AKTH. There were 10 different types of gynaecological emergencies seen within the study period. The most common emergencies were abortion (59.3%), ectopic pregnancy (13.2%), menstrual disorders (7.9%), bleeding gynaecological malignancies (5.3%) and sexual assault (5%).

When the socio-demographic characteristics of the patients in some of the most common gynaecological emergencies group were compared with the socio-demographic characteristics of patients without gynaecological emergencies, it was found that patients' socio-demographic characteristics play a significant role in their pattern of presentations, whereas outcomes of these emergencies are related to their cause and manner of presentation. Abortion was most common in individuals aged ≥20 years (62.3%), Hausa–Fulani ethnic group (51.7%), para 1 to 4 (69.9%), married (67.1%) and civil servant (87.2%) patients. Ectopic pregnancy was most common among individuals ages ≥20 years (14.9%), non-Hausa–Fulani ethnic group (18.3%) and nullipara (17.1%). Similarly, menstrual disorder was most common among individuals aged ≤19 years (22.9%), in nullipara (15.9%) and in women who were not married (22.7%). While sexual assault was most common in individuals aged ≤19 years (28.8%) and in Hausa–Fulani ethnic group (5.6%), this association was not statistically significant. These are detailed in Tables 3-6 respectively.

The common presentations of gynaecological emergencies were incomplete abortion for abortion (66.3%), ruptured ectopic for ectopic pregnancy (76.2%) and heavy menstrual bleeding for menstrual disorders (61.4%), as shown in Table 7.

Table 8 shows the causes of mortality among gynaecological emergencies seen in AKTH. The most common cause of mortality in gynaecological emergencies was bleeding gynaecological malignancies in which cancer of the cervix accounted for 41.2%.

Table 1: Socio-demographic features of patients that presented with gynaecological emergency

Socio-demographic characteristic	Frequency	Percentage
Age group (years)		
≤10	22	2.4
11-20	175	18.9
21-30	412	44.5
31-40	238	25.7
41-50	63	6.8
≥51	16	1.7
Total	926	100
Parity		
0	226	24.4
1-4	509	55.0
≥5	191	20.6
Total	926	100
Marital Status		
Married	745	80.5
Single	137	14.8
Widowed	10	1.1
Divorced	10	1.1
Minors	24	2.5
Total	926	100
Ethnic Group		
Hausa/Fulani	745	80.5
Igbo	43	4.6
Yoruba	60	6.5
*Others	77	8.4
Total	926	100
Occupation		
House Wife	595	64.3
Civil Servant	47	5.1
Artisan	74	8.0
Trading	38	4.1
Student	133	14.3
Pupils	39	4.2
Total	926	100

*Others include ethnic group not captured within the three major ethnic groups including Benin, Ebira, Okun, Ijaw, Touaregs

Table 2: Types of gynaecological emergencies seen in AKTH

Type of gynaecological emergencies	Frequency (n=926)	Percentage
Abortion	549	59.3
Ectopic pregnancy	122	13.2
Menstrual disorders	73	7.90
Bleeding gyn malignancies	49	5.30
Sexual assault	46	5.00
Hydatidiform mole	32	3.50
Ovarian accidents	19	2.10
PID	14	1.50
Abscesses	14	1.50
Coital laceration	5	0.50

PID - Pelvic inflammatory disease

Discussion

Emergencies are life threatening medical scenarios that require prompt attention to save life. Gynaecological emergencies deserve even more urgent attention because a lot of them occur in pregnant women, placing the life of the mother, the unborn child and her fertility at risk. A lot of them have favourable outcomes if intervention is rapid, timely and efficient. A total

Table 3: Patient characteristic by abortion and no abortion groups

Patients characteristic	Aborted *n* (%)	No abortion *n* (%)	Test statistic (χ^2)	*P*
Age group (years)				
≤19	46 (39.0)	72 (61.0)	23.097	0.0001*
≥20	503 (62.3)	305 (37.7)		
Ethnic group				
Hausa/Fulani	456 (61.1)	290 (38.9)	5.376	0.020*
Other	93 (51.7)	87 (48.3)		
Parity				
0	88 (38.9)	138 (61.1)	64.179	0.0001*
1-4	356 (69.9)	153 (30.1)		
≥5	105 (55.0)	86 (45.0)		
Marital status				
Married	500 (67.1)	245 (32.9)	96.732	0.0001*
Unmarried	49 (27.1)	132 (72.9)		
Occupation				
House wife	353 (59.3)	242 (40.7)	85.834	0.0001*
Civil servant	41 (87.2)	6 (12.8)		
Trader/Artisan	88 (78.6)	24 (21.4)		
Student	65 (48.9)	68 (51.1)		
Pupils/Unemployed	2 (5.1)	37 (94.9)		

* - Statistically significant

Table 4: Patient characteristic by ectopic and no ectopic groups

Patient characteristic	Had ectopic pregnancy *n* (%)	No ectopic pregnancy *n* (%)	Test Statistic (χ^2)	*P*
Age group (years)				
≤19	2 (1.7)	116 (98.3)	15.580	0.0001*
≥20	120 (14.9)	688 (85.1)		
Ethnic group				
Hausa/Fulani	89 (11.9)	657 (88.1)	5.197	0.023*
Other	33 (18.3)	147 (81.7)		
Parity				
0	40 (17.7)	186 (82.3)	18.355	0.0001*
0-4	74 (14.5)	435 (85.5)		
≥5	8 (4.2)	183 (95.8)		
Marital status				
Married	99 (13.3)	646 (86.7)	0.043	0.836
Unmarried	23 (12.7)	158 (87.3)		
Occupation				
Housewife	90 (15.1)	505 (84.9)	5.745	0.219
Civil servant	4 (8.5)	43 (91.5)		
Trader/Artisan	10 (8.9)	102 (91.1)		
Student	14 (10.5)	119 (89.5)		
Pupil/Unemployed	122 (13.2)	35 (89.7)		

* - Statistically significant

of 3050 gynaecological consultations were done within the study period, 1337 of which were gynaecological emergencies (43.8% of cases seen). A similar finding was documented in other parts of the country.[4] Such a high proportion highlights the still abysmal attitudes toward contraception use. This needs to be explored and dealt with holistically.

In this study, approximately 70% of the patients were in the 21–40-year age group. Similar findings have also been documented in other parts of Nigeria.[4,5] and in a related study in the same institution in 2013, where approximately 80% fell within this age bracket, having presented to the gynaecological unit for emergency manual vacuum aspiration.[11] This is not surprising since gynaecological emergencies are mostly seen among women of reproductive age group, and this age group is at the peak of their reproductive age. Moreover, majority of gynaecological emergencies are pregnancy related.

Abortion was the most common gynaecological emergencies seen in our study center within the study period, accounting

Table 5: Patient characteristic by menstrual disorders and no menstrual disorders groups

Patient characteristic	Had menstrual disorder *n* (%)	No menstrual disorder *n* (%)	Test statistic (χ^2)	*P*
Age group (years)				
≤19	27 (22.9)	91 (77.1)	41.889	0.0001*
≥20	46 (5.7)	762 (94.3)		
Ethnic group				
Hausa/Fulani	53 (7.1)	693 (92.9)	3.205	0.073
Other	20 (11.1)	160 (88.9)		
Parity				
0	36 (15.9)	190 (84.1)	48.676	0.0001*
1-4	12 (2.4)	497 (97.6)		
≥5	25 (13.1)	166 (86.9)		
Marital status				
Married	32 (4.3)	713 (95.7)	67.571	0.0001*
Unmarried	41 (22.7)	140 (77.3)		

* - Statistically significant

Table 6: Patients characteristics by sexual assaulted and no sexual assaulted groups

Patient characteristic	Sexually assaulted *n* (%)	Not sexually assaulted *n* (%)	Test Statistics (χ*)	*P*
Age group (years)				
≤ 19	34 (28.8)	84 (71.2)	162.889	0.0001*
≥20	12 (1.5)	796 (98.5)		
Ethnic group				
Hausa/Fulani	42 (5.6)	714 (94.4)	3.015	0.082
Other	4 (2.4)	166 (97.6)		

* - Statistically significant

Table 7: Gynaecological emergency and most common versus least common presentation

Characteristics	Most common presentation (%)	Least common presentation (%)
Type of gynaecological emergency		
Abortion	Incomplete abortion (66.3)	Septic abortion (1.5)
Ectopic pregnancy	Ruptured (76.2)	Unruptured ectopic (23.8)
Menstrual disorder	Heavy menstrual bleeding (61.4)	Irregular menstruation (38.4)
Ovarian accident	Torsion (42.1)	Infected (26.3)
Hydatidiform mole	Complete mole (100)	None
Abscess	Pelvic abscess (71.4)	Bartholin's abscess (28.6)
Bleeding gynae malignancy	Cancer of the cervix (63.3)	Choriocarcinoma (16.3)

Table 8: Causes of mortality among the gynaecological emergencies

Gynaecological emergency	Frequency (*n*=34)	Percentage
Cancer of the cervix	14	41.2
Cancer of the endometrium	10	29.4
Choriocarcinoma	8	23.5
Ectopic pregnancy	2	5.9
Total	34	100

for 59.3% of all emergencies. The literature reports a similar trend.[5] This may be due to ignorance regarding family planning and contraception methods[12] or because majority of women from this region aspire for more children, ostensibly to compete with co-wives in a polygamous setting, requiring women to give birth till old age when the risk of chromosomal and congenital anomalies are higher. These anomalies then require termination or may even lead to spontaneous abortion.[3]

Abortion was more common in those aged ≥20 years accounting for 62.3% of the cases. This was similar to findings in northern parts of the country where it was documented to be higher in the 30–40-year age group.[13-16] A different trend was, however, noted in the southern parts where abortion was more common in the first and second decades of life.[4,6-17] This may be explained by earlier marriages in the north that prevents premarital sex and consequent unwanted pregnancy.[13-14]

Abortion was also more common among the Hausa–Fulani ethnic group in this study (61.1%) probably because they constituted the highest frequency of the cases studied. In this study, both married (67.1%) and parous (69.9%) women had more abortions than the unmarried and nulliparous. There is a possibility of deliberate termination

of pregnancy in already parous women if pregnancy is not desired.[3]

The most common presentation of abortion in this study was incomplete abortion while the least common presentation was septic abortion. This is similar to findings in northern parts of the country.[14] It is possible that these women deliberately started the process of abortion at home and presented to the hospital to complete the abortion as abortion is still illegal in Nigeria,[3] especially if the pregnancy was not desired. In the Southern part of the country, however, the most common presentation is septic abortion,[16] which may be because abortion is seen more among teenagers who are more likely to procure unsafe abortions in a bid to escape parental discipline.

Ectopic pregnancy was seen in 13.2% of the patients in this study. Prevalence as high as 26.01% and 74.8% have been noted in some other studies in this centre.[8,9] In these studies, however, abortion was not considered as only ectopic pregnancies were studied. Incessant strikes by health workers common during the study period were also not as common when other studies were carried out. The frequency was significantly increased in ages greater than 20 years (14.9%) probably due to increased high-risk sexual activity in this group. This finding is comparable to those of previous studies in both the southern and northern parts of the country.[13-17] Majority of ectopic pregnancies were ruptured (76.2%), which is similar to observations throughout the country and has been attributed to late presentation.[14-19]

The finding that ectopic pregnancy was more common (18.3%) among non-Hausa–Fulani ethnic group in this study may not be unrelated to increased high risk sexual behaviour because sexually transmitted disease is the most important risk factor in ectopic pregnancy,[18] and is directly associated with risky sexual behaviours.

Other relatively common emergencies include menstrual disorders (7.9%), which is similar to reported literature (7%).[4,5] These disorders were most common among age groups ≤20 years (22.9%), which is similar to other studies in the literature.[1,4,5] In this age group, the Hypothalamo-pituitary-ovarian axis is not yet fully developed, and therefore they experience periods of anovulation and consequent menstrual disturbances.[20]

Nulliparity (15.9%) and unmarried status (22.7%) were identified in this study as more common to menstrual disorders. It may just be because in this age group both nulliparity and unmarried status are the norm or it could be because of causative factors such as uterine fibroid, a known cause of menstrual disorder, being more common among the nulliparous.[21] The slightly increased risk of menstrual disorders among those with parity ≥5 may be due to the positive relationship between increased parity and bleeding gynaecological malignancies,[22] which sometimes is misinterpreted as menstrual disorder. The most common diagnosis was heavy menstrual bleeding (61.4%) which was expected as the age range commonly affected (≤19 years) is at risk of anovulation, which predisposes to heavy menstrual bleeding.

Frequency of sexual assault (5%) noted in this study was higher than that noted in a similar study at a tertiary hospital in the same northwestern geographical zone – The University Teaching Hospital, Zaria (0.06%) – probably due to higher Kano population. In this study, sexual assaults occurred more in the Hausa–Fulani ethnic group, though this was not statistically significant. In a study from the southwestern part of the country, a prevalence of 9.2%[23] was documented. High unrestrained consumption of alcohol may be the reason for increased prevalence of sexual assault in this region of the country as several social vices are induced by alcohol.[24] In the northern part of the country, the predominant religion, Islam, precludes alcohol consumption, and may be responsible for mitigating its effects.

Sexual assault occurred more in age group ≤19 years (28.8%), with approximately 47.8% of these cases below 10 years. This follows the trend in the literature where those affected in the northern region were found to be less than 16 years old.[25,26] This trend has been corroborated in Zaria and other northwestern Nigerian cities where majority of sexually assaulted individuals were aged 3–7 years.[25] Majority of child sexual abusers are often friends of the victims' parents, relatives and people well known by the victims.[25,26] This is a discouraging phenomenon and needs the input of health workers, social workers and policy makers to reduce its occurrence definitively.

The least common emergencies seen in our study include hydatidiform moles (3.5%), ovarian accidents (2.1%), abscesses (1.5%), coital laceration (0.5%) and PID (1.5%). All cases of hydatidiform mole in our study were complete moles. This is the most common presentation documented in the literature,[4] and may be because partial moles can be ultrasonographically mistaken for miscarriage.[3] PID occurred less commonly in our study even though it is the most common gynaecological emergency seen in some countries such as the USA.[4] This could be due to difference in health seeking behaviours as patients in developing countries rarely

present to hospital unless severe pain or complications have ensued.[27]

Bleeding gynaecological cancers accounted for 94.1% of all mortalities recorded in this study with cancer of the cervix accounting for the bulk of it (41.2%). Only 5.9% of the deaths were from non-malignant cases. This is similar to findings in the literature.[12] The deaths recorded reflected the propensity of patients to present late for treatment when only palliative measures can be undertaken.

Conclusion

The prevalence of gynaecological emergencies is high accounting for 43.8% of all gynaecological consultations, with abortion been the most common accounting for 59.3%. Abortion was commonly seen among the married and parous women. Sexual assault was also relatively common (5%) and majority (47.8%) occurred in age below 10 years. The outcomes of gynaecological emergencies in terms of mortality were generally good with a prevalence of 3.7%. Majority of mortalities seen were in those who presented with bleeding gynaecological malignancies (94.1%).

Limitations and recommendations

Our study is limited by its retrospective nature where data storage and retrieval are major concerns. Despite this, the study identified important reproductive health issues which need policy makers' attention and intervention. Therefore, the following are recommended:

1. Increased surveillance and advocacy of policies that strongly punish individuals convicted of sexual assault should be encouraged to serve as deterrents.
2. Policies that increase awareness of the entire populace with regards to the possible aetiology, natural history, availability and increased utilization of the screening tools for premalignant and early stage carcinoma of the cervix should be encouraged, especially for women.
3. Further research is required to identify the possible risks/causes of abortion in this environment along with possible ways of preventing them.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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