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Original Research Article

Evaluating the management outcomes of gynaecological emergencies at a tertiary hospital, Abakaliki Southeast, Nigeria

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ABSTRACT

Background: Gynaecological emergencies are common causes of emergency hospital presentation/admission. Majority of the emergencies are mostly pregnancy related and pose threat to two lives as well as the women's future reproductive careers. There is therefore need to evaluate them to make better preparations in managing them.
Methods: This was a 10 year (from 01 January 2012 to 31 December 2021) retrospective study of gynaecological emergencies managed at Alex Ekwueme Federal University Teaching Hospital, Abakaliki (AEFUTHA), evaluating their management and outcomes.
Results: The commonest cause of gynaecological emergency at AEFUTHA was miscarriage accounting for up to 69.1% out of which incomplete miscarriage contributed 70.8% and majority had manual vacuum aspiration with good outcome. Ruptured ectopic pregnancies were the commonest surgical emergencies with the incidence of 7.1% and all had laparotomy and partial salpingectomy. Gestational trophoblastic diseases accounted for 2.0% of gynaecological emergencies. The commonest non-pregnancy related gynaecological emergency was acute pelvic inflammatory diseases which accounted for 9.3% of cases. Other gynaecological emergencies reviewed were ovarian accidents (2.9%), abnormal uterine bleeding (3.9%), gynaecological malignancies (2.3%), coital laceration (1.5%), sexual assault (2.4%) and Bartholin's abscess (0.2%). Factors that affected the outcome were the age of the patients, marital status and disease type and were statistically significant ($p<0.05$).
Conclusions: Management outcomes of gynaecological emergencies were optimum. Mortality occurred in 1.3% of cases, with gynaecological malignancies accounting for 81.4%. There is usually a good prognosis when prompt, accurate diagnosis and treatment are administered.

Keywords: Gynaecological, Emergencies, Pregnancy and miscarriage

INTRODUCTION

Gynecological emergencies are life-threatening medical conditions that need urgent attention to prevent impending mortality or morbidity.[1,2] Most gynecological emergencies occur during pregnancy which makes them dire emergencies because they pose threats to two lives and even to the future reproductive careers of the women and should be managed as such to avert the impending mortality and morbidity.[1] Gynecological emergencies are common causes of hospital presentation in both developed and developing countries and form a major proportion of clinical work load because of their threat to life.[1-5] The female reproductive system is vulnerable to both dysfunction and disease from infancy to old age. Hence, women carry health risks and hazards linked to sexual and reproductive function that can cause mortality and morbidity if not urgently and properly managed,

highlighting the need for proper clinical management to improve outcome.[1,4,5]

The common gynecological emergencies include miscarriages, which are the commonest and major cause of maternal mortality and morbidity particularly in developing countries and constitute up to 57.6% of all gynecological emergencies in studies done in north-west and eastern Nigeria, ectopic pregnancy that constitute up to 74.8% of all surgical emergencies, acute pelvic inflammatory diseases, complicated ovarian cyst and hydatidiform mole in northern and western parts of Nigeria.[1-4,6] Less common gynecological emergencies include sexual assault that is commoner in children less than 10 years, bleeding gynecological malignancies which is commoner in the elderly, coital laceration, pelvic sepsis, symptomatic uterine fibroids and menstrual disorders that mostly occur at extremes of age.[1,3] Gynecological emergencies can be pregnancy related or non-pregnancy related.[3] The pregnancy related gynecological emergencies are common in developing countries unlike in developed countries where the commoner type is acute pelvic inflammatory diseases because most pregnancy related pathologies are diagnosed early due to good health seeking behavior and do not necessitate emergency presentation. The prevalence of gynecological emergencies is 43.8% in Aminu Kano Teaching Hospital (AKTH), with the highest frequency seen between 21 to 30 years.[1] In developed countries, approximately 1.4 million cases of gynecological emergencies are reported and 24.3 per 1000 women of reproductive age (15-49 years) but no equivalent values were found for developing countries.[3] Most gynecological emergencies in Nigeria are pregnancy related and may present with a period of amenorrhoea, vaginal bleeding and abdominal pain.[3,5,6,8] Clinical presentation of ectopic pregnancy may range from a wide spectrum of total lack of symptoms to shock and presentation in a moribund state following massive intra peritoneal bleeding that may pose a threat to the patient's life.[3] Common gynecological emergencies present like classical acute abdomen that may need to be differentiated from surgical acute abdomen.[3,5,7] Vaginal bleeding has been identified as the commonest symptom of pregnancy related gynecological emergencies with or without symptoms of acute abdomen. However, a recent study in Nigeria has reported poor correlation between clinical impression and ultrasonographic findings. Hence, diagnosis is usually clinical and should be correctly made immediately so as to decide proper management to prevent the impending mortality except in few cases when imaging may be necessary to confirm the suspected diagnosis.[3,8,9]

Treatment depends on the type of emergency presenting. There may be need for initial resuscitation before definitive treatment while in most cases resuscitation goes hand in hand with definitive treatment which could be surgery, when mortality is imminent. Treatment is multidisciplinary and requires a sonologist, specialist nurse and on call gynecological medical team to reduce mortality associated with gynecological emergencies.[5] Most of the emergencies will require a form of surgical procedure or the other ranging from manual vacuum aspiration to laparotomy; although with current advances, laparoscopic and minimal access surgeries can be used with good prognosis in well selected patients.[7]

Outcome of these emergencies vary depending on etiology and time of presentation and is generally good with early, correct diagnosis and prompt treatment.[1,2] It is generally good in developed countries because of early presentation and early diagnosis unlike in our environment where some factors interfere with health seeking behavior including environmental, cultural, religious and moral values. Poverty and illiteracy are still important causes of late presentation and diagnosis. As most of these women are deprived, abused and labor even in adverse health conditions.[1]

There is need to continually evaluate gynecological emergencies and their management outcomes, to better prepare for them, in order to improve upon outcome and obviate maternal mortality and morbidity. This study aims at evaluating the clinical management and outcome of gynecological emergencies at Alex Ekwueme Federal University Teaching Hospital, Abakaliki (AEFUTHA).

METHODS

Participants and procedure

This was a retrospective study of the clinical management and outcomes of gynecological emergency cases managed at AEFUTHA over ten years (from 01 January 2012 to 31 December 2021). The case notes of all women managed for gynecological emergencies at AEFUTHA during the period above were identified through the records (logs) at the gynecological emergency unit, theatre unit and gynecological ward registers. The folder numbers of the identified case notes were then used to retrieve the files from the Medical Records Department after ethical approval was obtained from the hospital's health research and ethics committee. The data were extracted into a designed study data sheet that had columns for the socio-demographic and gynecological emergency characteristics of the patients including age, parity, and occupation, highest level of education attained, presenting complaints, diagnosis made, treatment received, complications and outcomes for each patient. The above was done for case notes that had complete patient information on them. Data from incomplete case notes or lost case notes were disregarded. The sampling technique used was a convenience type as only case notes of patients who had gynaecological emergencies during the study period were reviewed in the order they were retrieved.

Statistical analysis

Data was collated, tabulated, and then statistically analyzed using statistical package for social science (IBM SPSS) software (version 22, Chicago 11, USA). Simple

descriptive statistic was used where appropriate. Chi-square test (X^2) was used to identify association between different gynecological conditions and the outcomes. A difference with a p value <0.05 was considered statistically significant.

RESULTS

A total of 4305 gynecological emergencies were noted, out of which 4217 fully documented case notes were retrieved (giving a retrieval rate of 98%). The results are presented in six tables including socio demographic data, incidence of common gynecological emergencies, management options for the conditions, complications, outcomes and the factors that affect outcome. Table 1 showed the sociodemographic characteristics of the patients; Table 2, the incidence of common gynecological emergencies, Table 3 the management options employed for the disease conditions and Tables 4-6, the complications, outcomes and factor that affect the outcomes respectively.

Table 1: Socio demographic data.

Parameter	Frequency	Percentage
Age		
≤20	260	6.2
20-34	3020	71.6
≥35	937	22.2
Parity		
0	1592	37.8
1-4	2317	54.9
≥5	308	7.3
Marital status		
Single	1087	25.7
Married	3016	71.5
Widow	112	2.7
Divorced	2	0.1
Level of education		
0/1	630	14.9
2	1929	45.7
3	1658	39.4
Occupation		
Civil servants	1467	34.8
Hand work	186	4.4
House wife	868	20.6
Business	839	19.9
Farmer	337	8.0
Student	520	12.3
Tribe		
Igbo	4178	99.1
Hausa	12	0.3
Yoruba	27	0.6
Religion		
Christianity	4198	99.5
African traditional religion	2	0.1
Muslim	17	0.4

The 20-34-year-old group were the most frequent. Most of the patients had either secondary or tertiary education (Table 1).

Pregnancy related conditions were more frequent than non-pregnant conditions. Among the pregnancy related conditions, miscarriage was most frequent while acute PID was the most frequent non-pregnancy related condition (Table 2).

Table 2: Common gynaecological emergencies.

Parameter	Frequency	%
Pregnancy related	3300	78.3
Miscarriages	2913	88.3
Ectopic pregnancies	302	9.2
GTD	85	2.5
Non-pregnancy related	917	21.8
Acute PID	392	42.7
Ovarian accidents	95	10.3
Abnormal uterine bleeding	165	18
Gynaecological malignancies	92	10
Coital laceration	63	6.9
Sexual assault	100	10.9
Bartholin cyst/abscess	10	1.1

Table 3: Management modalities of the gynecological emergencies.

Parameter	Frequency	%
Miscarriages		
MVA	2347	80.6
Misoprostol and MVA	100	3.4
Conservative	490	16.0
Acute PID		
Admission and antibiotics	392	100
Ectopic pregnancy		
Salpingectomy	300	99.4
Conservative tubal surgery	2	0.6
GTD		
Suction evacuation	85	100
Ovarian accident		
Cystectomy	95	100
Abnormal uterine bleeding		
Myomectomy	110	66.7
COCP	45	27.2
Polypectomy	10	6.1
Gynaecological malignancy		
Conservative	92	100
Coital laceration		
Repair under anaesthesia	63	100
Sexual assault		
PEP and contraceptive	90	87.1
Conservative	13	12.9
Bartholin cyst/abscess		
Marsupialization	10	100

Table 4: Complications of common gynecological emergencies.

Parameter	Frequency	%
Severe anaemia		
Ectopic pregnancy	300	99.4
Incomplete miscarriages	57	2.7
Abnormal uterine bleeding	20	12.1
Malignancy	67	72.7
Anaemic heart failure		
Incomplete miscarriage	10	0.5
Metastasis	92	100
Shock		
Ectopic pregnancy	37	12.2
Sepsis		
Miscarriage	100	4.8
Malignancy	27	29.1
Acute PID	3	0.9
Pelvic/tubo-ovarian abscess		
PID	10	2.6
Miscarriage	10	0.4
Pregnancy loss		
Threatened	80	38.1
Inevitable	130	61.9

Manual vacuum aspiration (MVA) was the most frequently done procedure, followed by salpingectomy for ectopic gestation (Table 3). Most of the gynecological emergencies resulted in severe anemia, sepsis and pregnancy loss (Table 4).

Outcome for the patients was generally good. As expected, patients with malignancy suffered the most mortality while 40 patients were lost to follow up (Table 5).

Table 5: Outcomes.

Parameter	Frequency	%
Alive	4123	97.7
Dead	54	1.3
Malignancy	44	81.4
Ruptured ectopic pregnancy	3	5.6
Incomplete miscarriage	2	3.7
GTD	5	9.3
Lost to follow up	40	1.0
Malignancy	23	0.6
GTD	17	0.4

Compared to other diseases, women who had a diagnoses of malignancy, ruptured ectopic gestation, incomplete miscarriage and GTD were more likely to die. This was however not statistically significant for ruptured ectopic pregnancy (Table 6).

Table 6: Factors affecting outcome of patients.

Variable	Outcome		X^2	P value	OR 95%CI
	Alive	Dead			
Age					
<20	257	3	78.22	0.00001	2.08 (1-5.008)
20-34	3003	7			
≥35	863	44			
Parity					
0	1556	10	12.69	0.0004	0.308 (0.204-0.419)
1-4	2282	35			
≥ 5	285	9			
Marital status					
Single	1082	5	178.7	0.00001	1.38 (1.05-2.675)
Married	2961	10			
Widowed	79	38			
Divorced	1	1			
Occupation					
Civil servant	1432	20	1.097	0.295	0.337 (0.222-4.004)
Artisan	175	11			
Housewife	860	3			
Trader	824	5			
Farmer	314	13			
Student	518	2			
Disease conditions					
Malignancy	25	44	1021.1	0.00001	0.0014 (0.0006-0.0031)
Ruptured ectopic gestation	299	3	0.046	0.445	1.33 (0.412-4.28)
Incomplete miscarriage	2061	2	43.85	0.00001	25.99 (6.32-106.83
GTD	63	5	0.152	0.0009	0.152 (0.059-0.395)

DISCUSSION

Most gynecological emergencies were pregnancy related and therefore occurred in the reproductive age group.[1] Out of the 4217 cases reviewed, the patients' age distribution ranged from 3 to 71 years. This wide age range is most likely because some emergencies like sexual assault is commoner in the younger age group. Sexual assault was found to be commoner in children and adolescents as up to 70% of cases were seen in those less than 20 years. This is higher than that reported by a study in Northern Nigeria where 28.8% of sexual assaults occurred in those less than 19 years.[1] On the other hand; gynecological malignancies were commoner in the older age group as up to 87.3% of cases were in those more than 40 years of age, which is similar to findings in other parts of the country. Gynaecological malignancies cases revealed were those that presented with acute emergency symptoms like bleeding and respiratory distress that needed emergency care. Majority of the patients (71.6%) were young women between the ages of 20 to 34 years. This is similar to 70.2% between the ages of 21-40 years reported in other parts of the country.[13] Majority of the patients (71.5%) were married and many (62.2%) were multiparas. This was expected since most of the emergencies were pregnancy related. Up to 99.1% of the patients were Igbos while 99.5% of the patients were Christians which was expected because this study was conducted in the Southeastern region of Nigeria with predominantly Christians and Igbos.

The commonest gynecological emergency in the facility over the study period was miscarriage, accounting for up to 69.1% of all the cases reviewed, out of which incomplete miscarriage was the commonest and was responsible for 70.8% of all miscarriages. This is higher than the miscarriage incidence of 59.3% reported in Northern Nigeria, and lower than 78.3% reported in other parts of Eastern Nigeria.[1,2] These variations could be due to inability to differentiate spontaneous miscarriages from induced miscarriages because most women do not admit attempt(s) at termination of pregnancy, and are therefore managed as spontaneous miscarriage. Another pregnancy related gynecological emergency was ectopic pregnancy that accounted in 7.1% of patients. The incidence of ectopic pregnancy reported in studies in other parts of Nigeria was within the range of 5.3% and 13.2%, and a narrower range of 0.9 to 4.34% was noted in other developing countries.[2,9,10] This is contrary to ectopic pregnancy incidence of 0.67% reported in developed countries.[9,10] This could be attributed to the higher incidence of complications of pelvic inflammatory disease (PID) in developing countries. Case fatality of ectopic pregnancy was 1.5% in northern Nigeria.

Gestational trophoblastic tumors were responsible for 2.0% of cases. This is higher than 0.36% reported by a study in south-east Nigeria (3.58 per 1000) but lower than 3.5% reported in Northern Nigeria, as well as 6.3% reported in a study conducted nationwide.[1,2] This low incidence could be because of poor data as many patients do not access treatment at the hospital and therefore continue to take herbal medications at home.

In contrast to the findings in this study just like every other developing country where pregnancy related gynecological emergencies are the commonest, in developed countries, non-pregnancy related emergencies are commoner with acute PID being the commonest. This is due to the availability of early pregnancy diagnosis that makes it possible for pathologies to be identified very early and treated electively before complications occur. However, acute PID was still the most common non-pregnancy related gynecological emergency at our facility. Sexual assault was found in 2.4% of cases which is lower than 5% by another study in Nigerai.[1] The least common gynecological emergency in this study is Bartholin's abscess.

Diagnosis of gynecological emergencies was mostly clinical. Most patients presented with features of acute abdomen. A history of amenorrhoea guides the diagnosis of pregnancy related cases. All patients had their last menstrual periods documented. Ultrasonography was among the initial assessment of patients that presented to the gynecological emergency room. Twenty-two point two percent (22.2%) of patients with ectopic pregnancy presented in shock, classical history of amenorrhoea, abdominal pain as well as dizziness or fainting spells with abdominal tap of non-clotting blood guiding clinical diagnosis. Ultrasound is usually employed to confirm diagnosis. Other higher imaging studies like computed tomography (CT) scan are not usually necessary under such emergency except when the patient has been fully stabilized which is not usually the situation in pregnancy related cases.[14] They all had emergency exploratory laparotomy with partial salpingectomy. They were all transfused with blood intra-operatively. This is similar to findings reported in other parts of the country.[8-10]

The aim of treatment is to save life and reduce morbidity as much as possible. Out of 2913 patients that presented with different forms of miscarriage, 2347 (80.6%) had manual vacuum aspiration, 3.4% received misoprostol preceding manual vacuum aspiration while 490 patients (16%) were managed conservatively. Conservative management was for those that presented with threatened miscarriage and those admitted for inevitable miscarriage. After detailed counselling of the patients with inevitable miscarriage, they opted to be admitted and managed conservatively because of religious reasons, as not to terminate the pregnancy that was still viable. All the patients with inevitable miscarriage expelled spontaneously with check manual vacuum aspiration done for some while 22.2% of patients with threatened miscarriage expelled. These patients all received analgesics and antibiotics. Blood products were transfused as indicated.

Ruptured ectopic pregnancy was the commonest surgical emergency in this study. Out of 302 cases of ectopic pregnancy reviewed, only two patients (0.6%) presented early with unruptured ectopic pregnancy and had tubal conservative surgery. The other 99.4% presented with classical symptoms of ruptured ectopic pregnancy and they all had emergency exploratory laparotomy and salpingectomy. They were transfused intra operatively. This is due to late presentation, as most cases are ruptured at the time of presentation with massive haemo-peritoneum which makes conservative option impossible. Similar findings were reported in other parts of the country.[2,8-10,12] This is contrary to what is obtainable in developed world where diagnosis of ectopic pregnancy is made early and the patients are offered the conservative care. This is possible because of dedicated early pregnancy services in such countries.[9,11]

All the patients with acute PID, ovarian accident, coital laceration, gynecological malignancy and Bartholin's abscess had in-patient antibiotics, cystectomy, repair under anaesthesia, conservative management and marsupialization respectively. Patients that were managed for penetrative sexual assault received post exposure prophylaxis and emergency contraception while the rest were managed conservatively. They were also referred to the Clinical Psychologist for further counseling and psychological support. Patients with abnormal uterine bleeding were managed according to the identified cause(s). The common causes of abnormal uterine bleeding encountered were symptomatic uterine fibroids, disorders of menstrual cycle, endometrial polyp and some bleeding gynecological malignancies. Patients who had symptomatic uterine fibroids had myomectomy.

The outcome of these gynecological emergencies was generally good. Mortality rate of 1.3% was recorded out of which gynecological malignancies contributed 81.4%. This is similar to reports by other authors although the death rate is lower than 3.4% reported by another study. Up to 1% of patients were lost to follow up as they never returned following discharge from the hospital. Patients with malignancy and GTD were mainly in this category.

Factors that affected outcome include age, parity, marital status and the type of disease condition. Most of the patients were young and within the 21-34 age bracket, who likely had better physiologic reserve to survive disease conditions. Women who were married would have better physical and psychological support from their spouses and relatives. Women who had malignancy were likely going to die as was noted in this study.

Limitations

This was a retrospective study. Some of the case notes were lost or with poor documentation of patient's information. Incompletely filled data were not included in this study.

CONCLUSION

Gynaecological emergencies are very common, but usually have good prognosis when accurate diagnosis is made and prompt/appropriate treatment instituted. Since most gynecological emergencies are pregnancy related, early pregnancy diagnosis will reduce the incidence of these emergencies, as well as improve outcome.

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