

Ectopic Pregnancy in General Practice: Experience from General Hospital, Calabar, Cross River State, Nigeria

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Abstract: Ectopic pregnancy is associated with increased incidence of morbidity and mortality in women of child bearing age in Nigeria and other developing countries. We sought to determine the incidence, risk factors, clinical presentation and the type of surgical treatment offered in patients who were managed in the General Hospital, Calabar within a 7-year period. Case notes were retrieved from the records department and relevant data extracted for analysis. There were a total of 6,437 deliveries and 1,077 gynaecological admissions. One hundred and thirty (130) ectopic pregnancies were managed giving an overall incidence rate of 2.02% and 12.07% of all obstetrics and gynaecological admissions respectively. The mean age of presentation was 25.23±3.75 years. Majority of the subjects were nulliparous (73.3%). The common clinical presentation was abdominal pain (49.50%). A previous induced abortion (72.7%) was the commonest risk factor identified. Ultrasound was the method commonly employed in diagnosis. Most (67.5%) presented at a gestational age of 7 weeks and below. All study subjects had open laparotomy, mostly salpingo-oophorectomy and salpingectomy. Most of the pregnancies were located on the fallopian tubes at the ampulla (54.7%). Ruptured ectopic accounted for 82.8% of all cases. Post-operatively, anaemia was the common complication noted (7.8%). One (1) patient died giving a mortality rate of 1.3%. With most of the patients presenting late with ruptured ectopic gestation, this therefore, necessitates the need for frontline doctors to be well trained in recognizing and managing ectopic pregnancy, medically and surgically.

Key words: ectopic pregnancy, General Practice, Calabar, Nigeria

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I. Introduction

Ectopic pregnancy (EP) remains a significant cause of maternal morbidity and mortality in the first trimester of pregnancy in Nigeria and other developing countries. It is also the commonest gynecological surgical emergency encountered in health care centers in Nigeria and other countries in sub-Saharan Africa (SSA).[1, 2, 3, 4] The commonest clinical presentation in these low income and resource poor countries of SSA is tubal rupture and hemorrhage with its attendant risk of death from hypovolemic shock. [1, 2, 3, 4] The records available from our study site showed that there were 25 maternal deaths during the study period and six of the deaths were due to ruptured ectopic pregnancy, accounting for 24% of maternal deaths.

Most district and cottage hospitals which serve a large population of Nigerians in urban, rural and underserved communities are faced with inadequate essential health technologies and a dearth of specialist surgeons, anesthesiologists and gynecologists. Consequently, majority of the surgical procedures in these district hospitals in Nigeria are performed by generalist medical officers. Since the conservative management of EP is not yet being done in these hospitals, as it is now being practiced in the developed countries,[5, 6] a high index of suspicion is required by these frontline doctors to make accurate and prompt diagnosis, in addition to the surgical skills for the management of EP in the districts and peripheral hospitals.

Most studies and reviews on EP in Nigeria are from the university teaching hospitals and the incidence has been reported to vary from 3 -30 EPs per 100 deliveries i.e.0.29-3.0 %.[1, 2, 3, 4] None of these reports indicated using conservative management and treatment as it is being practiced in advanced countries. The basic reason is that many of the patients also present with ruptured EP. Those who may have presented un-ruptured or slow-leaking may have escaped diagnosis because of lack of modern and advanced diagnostic technologies.

Advances that facilitate early diagnosis and conservative management include transvaginal ultrasonography, laparoscopy and improved chemical detection by radio-immunoassay of beta-subunit of human chorionic gonadotrophin. [5, 6, 7]

Family Medicine (General Practice) is an up-coming specialty in Nigeria. Family physicians, because of the broad nature of their training, practice a wide range of procedural skills.[8, 9] The procedural skills are often unlimited, especially in rural areas where access to other medical specialists is limited. [10] Family physicians by their training act as caregivers, communicators, managers of resources, co- ordinators, advocates and researchers. These attributes place them in a pivotal role in creating awareness and management of EP in the environ of practice. Salpingectomy by laparotomy for ruptured ectopic pregnancy is one of such procedures [8, 9, 10] that family physicians and generalist medical officers perform at the General Hospital, Calabar, where ruptured EP is a leading cause of maternal death.[11] The aim of this study therefore, was to determine the incidence, presentation, associated factors and management of EP at the General Hospital Calabar. This study is among the few from a public secondary health care facility in Nigeria, and from the perspective of family medicine/general practice. Its publication is with the hope that it will increase the awareness and index of suspicion among frontline doctors in the early diagnosis and intervention of EP management in hospitals in our environment.

II. Materials And Methods

Ethical approval was granted by the Health Research Ethics Committee of the Ministry of Health, Calabar on the 5th, September 2013 with reference number CRS/MH/CGS/E-H/018/Vol. 11/047 before the commencement of this research.

This was a retrospective case record review study of all patients who were diagnosed and managed for ectopic pregnancy at the General Hospital, Calabar from 1st January, 2006 to 31st December, 2012. The hospital is a secondary health facility located in Calabar urban metropolis of Cross River state in Nigeria. It is a 135 bedded facility with a staff strength of about four hundred people which include the doctors, nurses, laboratory technicians and other supporting staff. Of the 130 cases of ectopic pregnancy managed at the Hospital during the study period, only 77 had complete information suitable for the study giving a retrieval rate of 59.2%. The case folders without complete information were excluded from the analysis. Information on age, parity, clinical presentation, diagnosis, surgical findings and treatment, including complications were extracted from patient's case-notes, ward registers and theatre records. Information on the type of anesthesia used and the attending Anesthetist was obtained. Records of total gynecological admissions and the total births during the study period were also obtained. The team of reviewers were physicians who have had training in research and were also authors that wrote the article. The data was collected by the use of a checklist that was validated after carrying out a pilot study.

III. Statistical Analysis

All data obtained was entered into and analysed with Statistical Package of Social Sciences (SPSS) version 18.0 software (SPSS Inc, Chicago Illinois, USA). The mean \pm standard deviation (SD) was computed for the quantitative variables, while frequency and percentages were generated for qualitative variables. A p – value of < 0.05 was taken as statistically significant.

IV. Results

There were a total of 6,437 deliveries and 1,077 gynaecological admissions. One hundred and thirty (130) ectopic pregnancies were managed giving an overall incidence rate of 2.02% and 12.07% of all obstetrics and gynaecological admissions respectively. All the surgeries were mostly salpingectomy and salpingo-oophorectomy by open laparotomy. General anaesthesia with endotracheal intubation was used in all the cases. The surgeries were performed by generalist medical officers and family physicians while anaesthesia was administered by nurse anaesthetists.

Table 1: Socio-demographic characteristics of study participants

Variable	Frequency (N=77)	Percentage (%)
Age group/years		
≤20	11	14.3
21-25	32	41.6
26-30	30	39.0

≥31	4	5.1
Mean ± SD	25.23 ± 3.75	
Parity		
Nil	58	73.3
1-4	18	23.4
>4	1	1.3
Marital status		
Single	40	52.0
Cohabiting/married	37	48.0
Occupation		
Applicant	19	24.6
Student	22	28.6
Business	26	33.8
Civil servant	4	5.2
Housewife	3	3.9
Others*	3	3.9

Others* include footballer, farmers

Table 1 shows the socio-demographic characteristics of study participants. A total of 77 women aged from 16 to 35 years who had ectopic pregnancy were included in the study. Their mean age was 25.23 ± 3.75 years. Those aged 25 years and below constituted 55.9% of the study participants. Majority of the subjects (73.3%) had nil parity, followed by 23.4% who had parity 1 to 4. Only 1(1.3%) had parity above 4. Regarding marital status, 52.0% were single while 48.0% were either married or co-habiting. A little above half of the study subjects were either applicants or students while about one-third (33.8%) were businesswomen. Only 4(5.2%) were civil servants

Figure 1: Clinical presentations of ectopic pregnancy

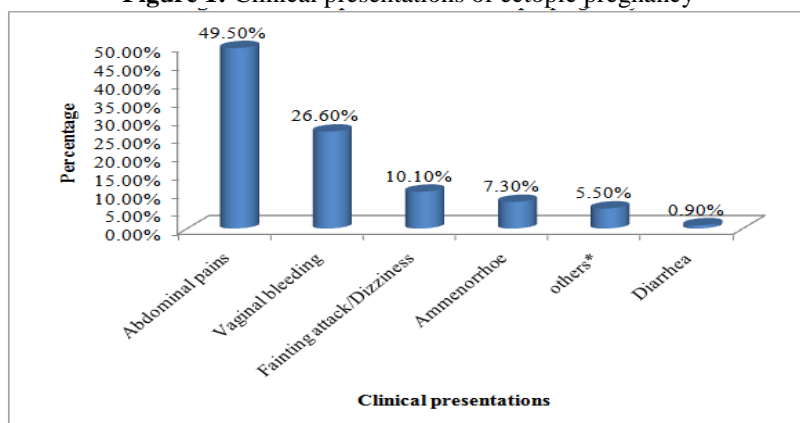


Figure 1 shows the clinical presentation of ectopic pregnancy among study subjects. The most common clinical presentation was abdominal pain (49.5%) and the least clinical presentation was diarrhea (0.9%).

Figure 2: Risk factors for ectopic pregnancy among study subjects

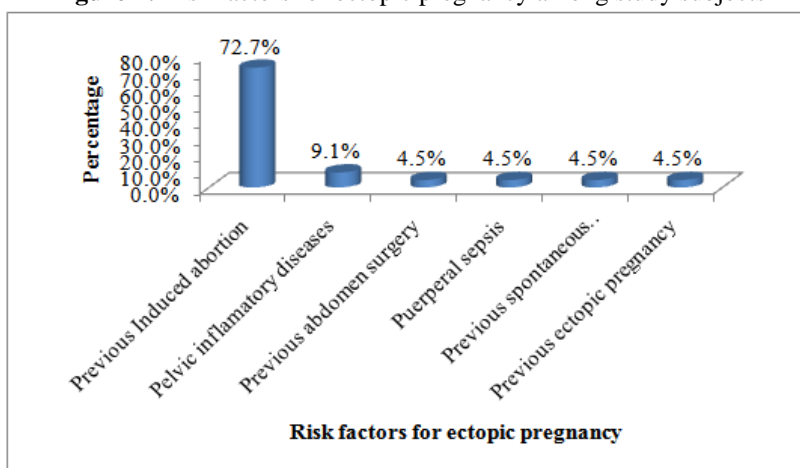


Figure 2 shows risk factors for ectopic pregnancy among study participants. The most common risk factor was previous induced abortion (72.7%).

Figure 3: Methods use to diagnose ectopic pregnancy among study subjects

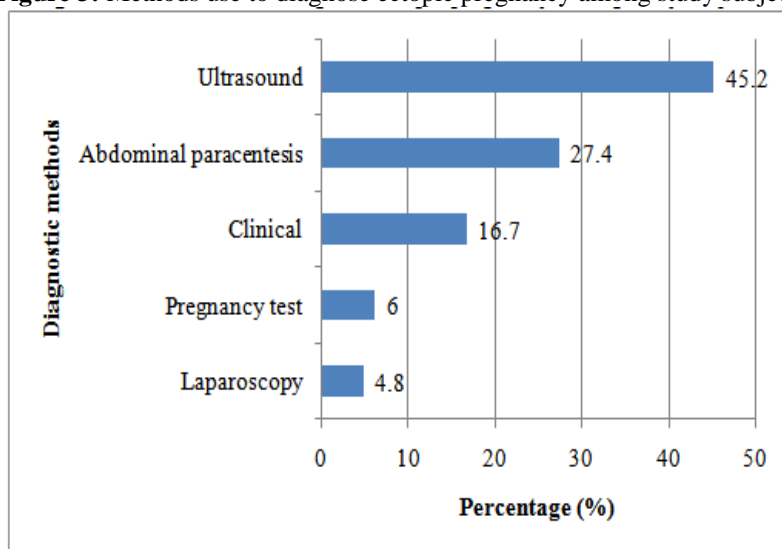


Figure 3 shows methods used to make a diagnosis of ectopic pregnancy among study subjects. The most common method used was ultrasound (45.20%), and the least was laparoscopy (4.8%).

Table 2: Gestational age at which ectopic pregnancy was diagnosed

Gestational age/weeks	Frequency (N=77)	Percentage (%)
≤7	52	67.5
8-12	12	15.6
>12	13	16.9

Table 2 shows the gestational age at which the diagnosis of ectopic pregnancy was made among study subjects. In a little above two-thirds of the respondents (67.5%), ectopic pregnancy was diagnosed at a gestational age of 7 weeks and below.

Table 3: Location and treatment for ectopic pregnancy among study subjects

Treatment	Frequency (N=77)	Percentage (%)
Location		
Right side	56	72.7
Left side	21	27.3
Treatment		
Salpingectomy	22	28.6
Salpingo-oophorectomy	51	66.2
Salpingectomy and metroplasty	4	5.2

Table 3 is a representation of the different locations and treatment modalities for ectopic pregnancy among study subjects. Majority of the participants had the ectopic pregnancy located on the right side (72.7%). Approximately two-third of participants (66.2%), the treatment was salpingo-oophorectomy.

Table 4: Distribution of doctors for treatment of ectopic pregnancy

Variable	Family Physicians (N = 45), %	Generalist Medical Officers (N = 32), %
Salpingectomy	12 (50.0%)	12 (50.0%)
Salpingo-oophorectomy	30 (61.2%)	19 (38.8%)
Salpingectomy and metroplasty	3 (75.0%)	1 (25.0%)

Table 4 shows the distribution of doctors for the various surgical procedures, and majority of the combination surgical procedures were done by the family physicians with Salpingo-oophorectomy (61.2%) and Salpingectomy and metroplasty (75.0%).

Complication	Frequency (N=77)	Percentage (%)
Anemia	6	7.8
Pyrexia	4	5.2
Wound sepsis	5	6.5
Maternal death	1	1.3
Nil complication	61	79.2

Table 5 shows post-operative complications among study subjects. Sixty-one (79.2%) of the subjects had no complications at all following surgery, but one case (1.3%) of maternal death was recorded.

Figure 4: Sites of ectopic pregnancy among study subjects

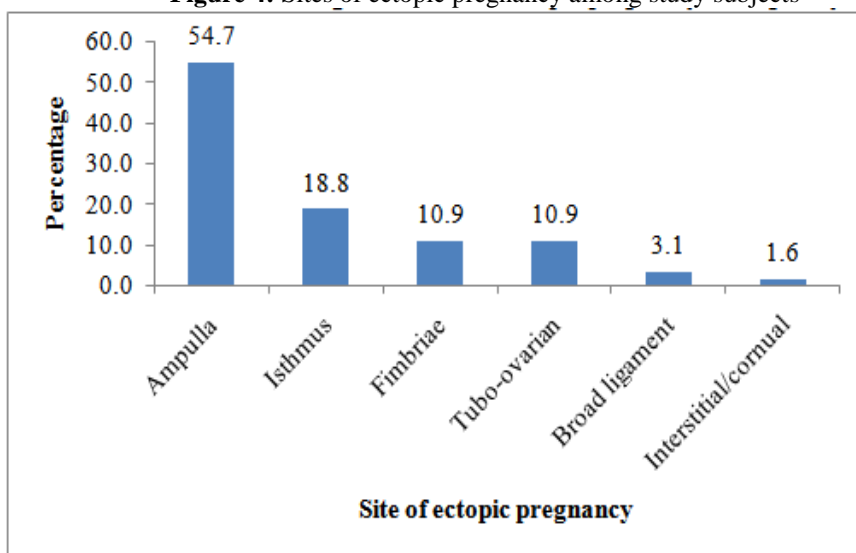


Figure 4 represents the sites of ectopic pregnancy among study subjects. The most common site was the ampulla (54.7%), and the least occurred in the interstitial/cornual (1.6%).

Figure 5: Operative findings among study subjects.

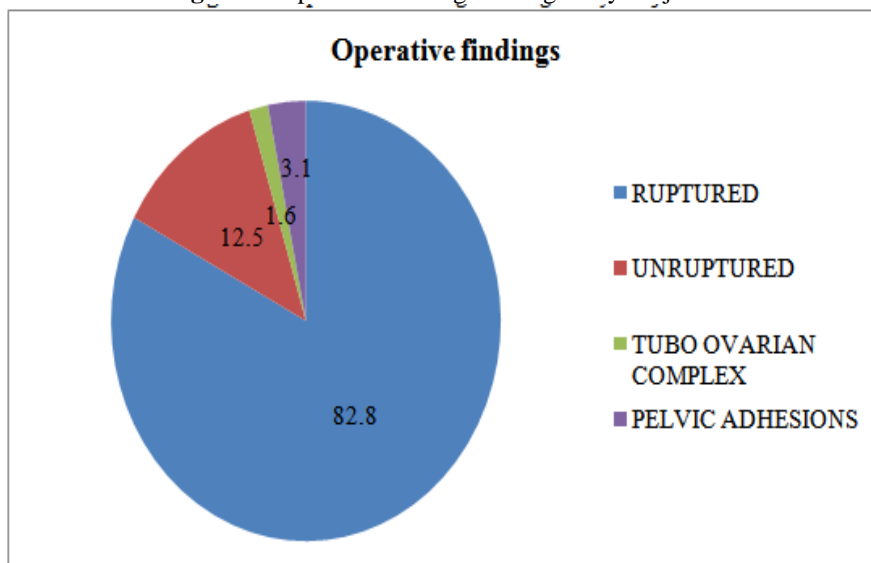


Figure 5 is a pie-chart showing operative findings among study subjects. The most common finding was ruptured ectopic (82.8%), whereas the least was tubo-ovarian complex in 1.6% of them.

V. Discussion

The incidence of 2.02% in our study was lower than that obtained in a study conducted in Lagos, Southwest Nigeria where the incidence was 3.89% [12] and 3.3% in a study carried out at the University of Calabar Teaching Hospital between 1996 –2000. [13] It was slightly lower than the study in Abuja, Nigeria’s

Federal Capital Territory [2] with an incidence of 2.7%. Our incidence value was also higher than that obtained in Sokoto, Northwestern Nigeria and Nnewi in southeastern Nigeria with incidence rates of 1.51% and 0.9% respectively [14, 15]. Gupta et al in an Indian Study had a comparatively low incidence rate of 0.26%. [16] This lower incidence rate may be due to the shorter duration (3 years) and smaller sample size of 40 cases that was used.

Majority of the patients being 30 years and below was consistent with other studies. [14,17,18] Majority of the participants in our study were single and nulliparous in keeping with some studies [12,14,17,18] as against the participants in other studies that were married and multiparous [14,15] Having more nulliparous subjects in this study may be attributable to the fact that most were single and relatively young in age. Students made up majority of our study participants. Female students may be vulnerable to sexual exploitation by men for financial reasons including prostitution to make ends meet, particularly, in this town with several tertiary institutions. This could encourage the act of having multiple sexual partners and probably engaging in unprotected sexual escapades.

This subsequently may lead to sexually transmitted infections (STIs) and unwanted pregnancy which may culminate in unsafe abortions. Also, a study in Ghana shows that lack of knowledge about contraceptives, being single or employed, having a higher number of pregnancies were associated with increased likelihood of induced abortion [19]. Abortions and STIs are risk factors for ectopic pregnancy.

Clinically, patients present with varying signs and symptoms. Abdominal pain was the commonest clinical presentation which was similar to other studies. [2, 14, 15, 18] Other features seen in our study were vaginal bleeding, fainting attacks/dizziness, amenorrhoea amongst others. Previous induced abortion was the commonest risk factor for ectopic pregnancy followed by pelvic inflammatory disease in keeping with similar studies. [15, 17, 18]. In Nigeria, abortion is not legalized. Most victims therefore seek help in unsafe environments, where unsterile instruments are used and the abortion procedure is usually performed by quacks. A culmination of these factors usually makes the affected women susceptible to pelvic infections which makes them prone to ectopic pregnancy.

Although laparoscopy is the gold standard for diagnostic management of ectopic pregnancy, abdominal pain should raise suspicion for the malady in any woman of child bearing age. Ultrasonography is the diagnostic test of choice in our environment where there are very few gynaecological experts. It was available in our study centre and was utilized for majority of the cases diagnosed. This was followed by abdominal paracentesis which clinicians practicing in the tropics and resource constrained settings are familiar with. Igwegbe et al [15] in a study had the gestational age at presentation of 7.4 weeks of most subjects which was in keeping with our study findings. All our study subjects underwent laparotomy and had tubal surgeries.

This was because diagnosis was not done early due to late presentation and most had ruptured in findings at surgery. This scenario was reflected in other regional studies [2, 13, 14, 15]. Most ectopic pregnancies were located at the fallopian tubes in the ampulla, then the isthmus. Majority were on the right corroborating other study findings [12, 14, 15]. Post-operative anaemia, pyrexia and wound sepsis were the commonest complications observed in our study subjects. This was in keeping with other studies in Nigeria [20, 21] and India [22]. Anaemia in the patients was not surprising as most of the ectopic gestations had ruptured on presentation.

VI. Limitations

However, this study is not without limitations, as it is a retrospective study where some information needed from the hospital records were not available such as the income and educational status of the patients.

VII. Conclusion

In conclusion therefore, our study shows that younger nulliparous women with amenorrhoea and abdominal pains were more likely to have ectopic pregnancy. Also, late presentation in terms of ruptured ectopic was a major risk factor for EP.

In view of these findings, it is important that the frontline doctors in developing countries like ours be endowed with adequate knowledge and skills for early recognition and management of EP.

VIII. Recommendations

New and cheap technologies should be adopted in recognizing this condition early to avoid preventable maternal morbidity and mortality. Women of child bearing age should be encouraged to report early to health facilities when they notice any unusual sign or symptom.

Medical practitioners and other health workers should be encouraged to record comprehensive and detailed patient information to enhance data retrieval for research, medical care and follow up.

References

- [1]. WC Orazulike and JC Konie, Diagnosis and management of ectopic pregnancy, *Women's Health (Lond, Engl)* 9(4), 2013, 373-385.
- [2]. GO Akaba , TE Agida, O Onafowokan, Ectopic pregnancy in Nigeria's federal capital city: a six year review, *Nigerian Journal of Medicine*, 21(2), 2012, 241-245
- [3]. GO Igberase ,PN Ebeigbe, OF Igbekoyi, BI Ajufoh BI, Ectopic pregnancy: an 11-year review in a tertiary centre in Niger Delta, *Tropical Document*, 35, 2005,175-177.
- [4]. J Musa, FH Daru , JT Mutahir , IAO Ujah, Ectopic pregnancy in Jos, Northern Nigeria: Prevalence and Impact on subsequent fertility, *Nigerian Journal of Medicine*, 18(1), 2009, 35-38
- [5]. D Jurkovic and H Wilkinson, Diagnosis and management of ectopic pregnancy, *British Medical Journal*, 342, 2011, d3397.
- [6]. F Mol, BW Mol, WM Ankum, F Van der veen, PJ Hajenius , Current evidence on surgery, systemic methotrexate and expectant management of tubal ectopic pregnancy: a systematic review and meta-analysis, *Human Reproduction Update* , 14, 2008,309-319.
- [7]. P Foumane , JS Dohbit, Ndingue, AS Doh, ET Mboudou, S Mbakop S, PM Tebeu, Conservative treatment of ectopic pregnancy in a sub-Saharan African setting, *Tropical Document*, 41, 2011, 79-81.
- [8]. BF Kelly, JM Sicilia, S Formam, W Ellert, M Nothnagle, Advanced procedural training in Family Medicine: A group Consensus Statement, *Family Medicine*, 41(6), 2009, 398-404
- [9]. I Couper and B Mash, Obtaining consensus on core clinical skills for training in family medicine, *South African Family Practice*, 50(6), 2008, 69-73
- [10]. M King, P Bewes, J Cairns, J Thornton, *Primary Surgery Vol 1; Non-Trauma, Chapter 16: Surgery of Pregnancy*, 2nd Ed. 2008
- [11]. U Asibong, IB Okokon , TU Agan, A Oku, MM Opiah, EJ Essien , E Monjok, The use of the partograph in labor monitoring: A cross-sectional study among obstetric care givers in General Hospital, Calabar, Cross River State, Nigeria, *International Journal of Women's Health*, 6, 2014, 873-880.
- [12]. AA Adewunmi, KA Adewunmi, AO Tayo, OE Aletan, Ectopic pregnancy in Lagos State University Teaching Hospital, Ikeja, Lagos Nigeria. *Nigeria Medical Practitioner*, 58, 2010, 1-2.
- [13]. A Udo, M Ekott, EI Ekanem, C Iklaki, O Udofia , E Udoma, Incidence of ectopic pregnancy in Calabar, Nigeria: two halves of the last decade compared, *Global Journal of Community Medicine*, 2, 2009, 1-2.
- [14]. A Panti, NE Ikechukwu , OO Lukman , A Yakubu, SC Egondu , BA Tanko, Ectopic pregnancy at Usmanu Danfodiyo University Teaching Hospital Sokoto. A ten year review. *Annals of Nigerian Medicine*, 6, 2012, 87-91.
- [15]. AO Igwegbe, GU Eleje, BC Okpala, An appraisal of the management of ectopic pregnancy in a Nigerian tertiary hospital, *Annals of Medicine and Health Science Research*, 3(2), 2013, 166-170.
- [16]. G Rita, P Sanjay, SG Madhusudan, S Neelam, M Priyanka, Incidence, trends and risk factors for ectopic pregnancy in a tertiary care hospital of Najasthan, *Journal of pharmaceutical and Biomedical sciences*, 16(07), 2012,
- [17]. BT Etuknwa , OO Azu, AI Peter, GJ Ekandem, K Olaifa, AN Aquaisua, et al, Ectopic pregnancy: A Nigeria Urban Experience, *Korean Journal of Obstetrics and Gynecology*, 55(5), 2012, 309-314.
- [18]. LL Osahemi, B Okechukwu, P Anozie P, O Ezeonu O, Ectopic pregnancy: life threatening gynaecological emergency, *International Journal of Women's Health*, 5, 2013, 515-521.
- [19]. EE Klutsey and A Ankomah, Factors associated with induced abortion at selected hospitals in Volta region, Ghana, *International Journal of Women's Health*, 6, 2014, 809 – 816.
- [20]. PA Isabu , RA Eifediyi , CC Umelo, AJ Ikhelo, C Affusim, Trends ectopic pregnancy in a Nigerian sub-rural teaching hospital, *Standard Global Journal Medical Sciences*, 1(4), 2014,082-090.
- [21]. R Ayyuba and SG Hadiza, Risk Factors and outcomes of Ectopic pregnancies at Aminu Kano Teaching Hospital, Kano, Nigeria, *Tropical Journal of Obstetrics and Gynecology*, 304(2), 2013.
- [22]. SK Shradha and SK Anil, A clinical study of ectopic pregnancies in a tertiary care hospital of Mangalore, *Indian Journal of Medical and health science*, 4(1), 2014, 305-309.

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