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A 10 year's retrospective study of EP cases managed in UCH. Information was collected using a proforma and data analysed using SPSS 20. A total of 337 women had ectopic pregnancy. Mean age was 29.8 +/-5.6 years and majority (82.2%) were married. Identified risk factors were previous abdominal/pelvic surgery (ies), ectopic pregnancy and abortions while common clinical features include abdominal pain, vaginal bleeding and amenorrhoea. Majority (76.6%) were ruptured while ampulla of the fallopian tube was the commonest site. EP is still a dare emergency in our environment with most women presenting after it has ruptured. However, the risk factors and presentation has not changed.

**Keywords:** ectopic pregnancy, risk factors, presentation, trend.

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# A 10 Year Review of Ectopic Pregnancy in University College Hospital, Ibadan, Nigeria

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## I. INTRODUCTION

Ectopic pregnancy (EP) is defined as a pregnancy in which the implantation of the embryo occurs outside the uterine cavity, most frequently in one of the two fallopian tubes or, more rarely, in the abdominal cavity. EP is the leading cause of maternal mortality in industrialized countries in the first three months of pregnancy, and possibly the second most frequent cause in developing countries after abortion complications<sup>1, 2, 3</sup>. It is a major health problem for women of childbearing age not only because it causes maternal mortality but of greater clinical importance is the indirect morbidity of poor fertility prognosis and adverse outcome in subsequent pregnancies with a 7-15% chance of recurrence and only 40-60% chance of conceiving after surgery<sup>4,5</sup>.

It is a common life-threatening emergency in the developing world with high burden and its frequency is still high<sup>6</sup>. The risk of death among those in the developed world is between 0.1 and 0.3 per cent while in the developing world it is between 1 and 3%<sup>7</sup>. Between 93 and 97% of ectopic pregnancies are located in a fallopian tube and 75% are located in the ampulla, 13% in the isthmus and 12% in the fimbriae<sup>8</sup>.

The incidence of ectopic pregnancy varies from country to country and within the same country, it varies from one community to another. There is currently an increased incidence of ectopic pregnancy globally due to higher incidence of salpingitis, inadequate treatment for pelvic inflammatory disease, use of intrauterine contraceptive device, increase in surgical procedures for tubal disease and improved diagnostic technique<sup>9</sup>. Several factors have been shown to increase the risk of ectopic pregnancy. These risk factors have the same mechanism of action with affectation of the ciliary functions of fallopian tube with pelvic inflammatory disease as the most common<sup>10,11</sup>. Other reported aetiological factors include previous ectopic pregnancy, endometriosis, previous tubal surgery, infertility and infertility treatments, previous caesarean sections, tubal spasm, and congenital defects of the fallopian tube<sup>12, 13</sup>. However, multiple factors have been shown to contribute to the relative risk of ectopic pregnancy although some patients may not have any risk factor. Behavioural and clinical risk factors include early sexual debut, multiple lifetime sexual partners, lack of condom use, miscarriage and induced abortion<sup>14</sup>.

Up to 10% of women with ectopic pregnancy have no symptoms, and one-third have no medical signs<sup>15</sup>. Signs and symptoms of ectopic pregnancy include increased human chorionic gonadotrophin, vaginal bleeding (in varying amounts), sudden lower abdominal pain, pelvic pain, a tender cervix, an adnexal mass or adnexal tenderness. In the absence of ultrasound or human chorionic gonadotrophin assessment, heavy vaginal bleeding may lead to a misdiagnosis of miscarriage. Nausea, vomiting and diarrhea are more rare symptoms of ectopic pregnancy. Also abdominal distension, tenderness, peritonism and hypovolemic shock are not uncommon symptoms when the ectopic pregnancy ruptures<sup>7</sup>.

This study is a ten year review conducted to determine the risk factors for ectopic pregnancy among patients presenting at a tertiary hospital in South Western Nigeria.

## II. METHODOLOGY

This was a retrospective study carried out in the department of Obstetrics and Gynaecology, University College Hospital (UCH). This hospital provides care at tertiary level. UCH is one of the largest teaching hospitals in Nigeria. The case records of all the patients

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with ectopic pregnancy who were managed at the University College Hospital (UCH) Ibadan during the study period were reviewed. All cases that were diagnosed and managed for ectopic pregnancy were included in the study. Information on socio-demographic characteristics, obstetric history, history of risk factors, clinical presentation on admission, and type of treatment offered was collected using a proforma. Data was entered and analysed using SPSS version 20. The results are presented in proportions and percentages.

### III. RESULTS

A total of 337 women were diagnosed and managed for ectopic pregnancy during the study period. Mean age was 29.8 +/- 5.6 years but ranged between 16 and 45 years with majority (34.1%) in the 26 to 30 years category. Higher proportions (82.2%) of them were married, a third (33.8%) were nulliparous women and about half (51.9%) of them had secondary level of education. Majority (57.3%) were self-employed (Table 1).

The presenting complaints varied extremely. Abdominal pain (80.1%), vaginal bleeding (49.9%) and amenorrhoea (28.2%) were the most frequent symptoms (Table 2).

Over the 10-year study period, the number of cases did not follow a regular pattern. The sixth year (2011) recorded the highest number of cases (58 patients) after which there was a consistent decrease in the number of cases with the lowest (13) in 2015 (Figure 1).

A large proportion of the patients (42.4%) in this study presented with past history of abortion. Previous contraceptive use and previous pelvic surgery were the other associated risk factors patients presented with in this study with 16.0% and 12.2% respectively. Among them 5.9% were intrauterine contraceptive device (IUCD) users and 4.5% were injectable users. The most commonly used method of contraception 5.9% was IUCD which is also an associated risk factor in this study. Only one patient was found to be a smoker (Table 3).

More than half (63.8%) of the patients had no documented site. The most documented site 11.3% of ectopic gestation was the ampullary region of the fallopian tube followed by the cornual (9.2%) while cervical region had the lowest occurrence (0.3%). More than half (57.9%) of the study population presented with the EP located in the right fallopian tube (Table 4). Majority (94.4%) of the cases were diagnosed through ultrasonography while 4.7% were through clinical physical examination only and 0.9% by laparoscopy. Among the 337 cases of ectopic pregnancies, the ruptured ectopic pregnancies accounted for 76.6%. This was followed by slow leaking 14.5% and only 8.9% were unruptured.

### IV. DISCUSSION

During the period of review, it was observed that there was a decrease in the incidence of ectopic pregnancy in UCH considering the last five years of the review. History of previous abortions, ectopic pregnancy, infertility, pelvic surgery, pelvic inflammatory disease, contraceptive use and tobacco use were the risk factors of EP identified in this study.

The peak age incidence was amongst women in the age group of 26-30 years which corroborates with findings of Panti et al.<sup>16</sup>, Udigwe et al.<sup>17</sup> and Etuknwaet al.<sup>18</sup>. This was not surprising, considering that this is the reproductive age group and high risky sexual behaviour is common in this age group.

The highest incidence of ectopic pregnancy was noted amongst nulliparous women, which was in conformity with findings from some other Nigerian studies<sup>19,20</sup>. This may be because most young unmarried people with unintended pregnancies often procure unsafe abortions, which subsequently predisposes them to having an ectopic gestation in future pregnancies or the relatively high incidence of EP among nulliparous may be explained by the increased use of fertility drugs (ovulation induction drugs) which are becoming a recognizable risk factor<sup>21</sup>.

This study identified previous histories of infertility, abortions, abdominal/pelvic surgery, ectopic pregnancy, pelvic inflammatory disease, contraceptive use, tobacco use as risk factors of ectopic pregnancy. It was observed that most of the cases of ectopic pregnancy had more than one risk factor. A previous history of abortion and contraceptive use were major risk factors. The study also revealed that majority of the patients were not using any form of contraception at the time of the ectopic pregnancy and this substantiates Panti et al. findings on women with ectopic pregnancy<sup>16</sup>. However, if a woman who is using intrauterine contraceptive device (IUCD) becomes pregnant, the chances of that pregnancy being ectopic are increased. This is because it is thought that IUD reduces intrauterine gestations by 99.5% and increases tubal implantation by 95%, thus accounting for the relative increase in tubal pregnancies in IUCD users. Also, the use of intrauterine contraceptive device increases the risk of developing an ectopic pregnancy almost four fold<sup>14</sup>.

One of the risk factors of EP in this study was previous history of an ectopic pregnancy. This finding corresponds with that of Jurkovic who reported that every woman with a previous ectopic pregnancy would be at a high risk of recurrence of another ectopic pregnancy<sup>22</sup>. The presenting symptoms, such as abdominal pain, vaginal bleeding and amenorrhoea, observed in this study agree with those reported by other researchers<sup>23</sup>. This is because most of ectopic pregnancy had ruptured at the time of presentation,

hence majority of these patient were haemodynamically compromised. This makes the condition a dare emergency with resuscitation and treatment effected immediately in other to save the woman's life.

In conclusion, this study revealed a decrease in the frequency of ectopic pregnancy in the more recent

years in the South Western Nigeria as opposed to a rising incidence of ectopic pregnancy worldwide. However, the risk factors and presentation has not changed.

*Table 1:* Socio-demographic characteristics

Variable	Frequency (N=337)	Percentage (%)
Age		
16-20	16	4.7
21-25	62	18.4
26-30	115	34.1
31-35	90	26.7
36-40	44	13.1
≥41	10	3.0
Marital status		
Married.	277	82.2
Single	59	17.5
Divorced.	1	0.3
Level of education		
Primary or lower.	31	9.2
Secondary.	175	51.9
Tertiary or higher.	131	38.9
Occupation		
Civil servant.	68	20.2
Self employed	193	57.3
Unemployed	20	5.9
Students.	56	16.6
Parity.		
0	114	33.8
1	67	19.9
2	64	19.0
3	53	15.7
4	21	6.2
≥5	18	5.3
Total		

*Table 2:* Clinical presentation

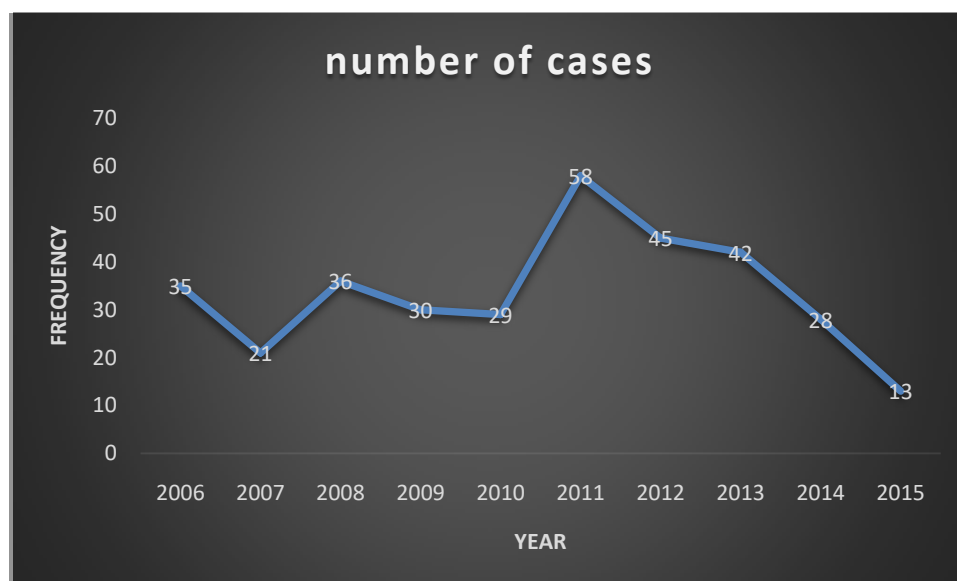
Symptoms	Number of patients	Percentage (%)
Bleeding per vagina	168	49.9
Abdominal pain	270	80.1
Amenorrhoea	95	28.2
Abdominal tenderness	3	0.9
Shock	6	1.8
Fainting/collapse	20	5.9
Dizziness/weakness	23	6.8
Nausea/vomiting	7	2.1

**Table 3:** Identifiable risks factors among the study population

Risk factors	Frequency	Percentage
Previous infertility	8	2.4
Previous abortions	143	42.4
Previous abdominal/pelvic surgery	41	12.2
Previous ectopic pregnancy	8	2.4
Previous PID infection	5	0.3
Previous contraceptive use	54	16.0
Tobacco use	1	0.3

**Table 4:** Site of ectopic pregnancy

Site	Frequency	Percentage (%)
Undocumented site	215	63.8
Fallopian tube		
-Left	142	42.1
-Right	195	57.9
Cornua	31	9.2
Isthmus	15	4.5
Ampullary	38	11.3
Fimbriae	13	3.9
Cervical	1	0.3
Ovarian	21	6.2
Interstitial	3	0.9

**Figure 1:** Ten-year trend of ectopic pregnancy in UCH

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