

# Ectopic pregnancy in Ilorin, Nigeria: A four year review

**Omokanye LO, Balogun OR, \*Salaudeen AG, Olatinwo AWO, Saidu R**

Department of Obstetrics and Gynaecology, University of Ilorin Teaching Hospital, Ilorin.

\*Department of Epidemiology and Community Health, University of Ilorin Teaching Hospital, Ilorin.

Correspondence to:

**Omokanye L.O.**

Phone +2348033630497,

e-mail: omostuff1111@yahoo.com

## **Summary**

**Aims and Objectives:** This is to study the incidence, predisposing factors, clinical presentation and management of ectopic pregnancy that presented over a four year period.

**Patients, Materials and Methods:** This is a retrospective study of 98 ectopic pregnancies managed at the gynaecological unit of University of Ilorin Teaching Hospital, Ilorin from 1<sup>st</sup> January 2004 to 31<sup>st</sup> December 2007. Information was obtained from the case notes, theatre and labour ward registers.

**Results:** A total of 10,054 deliveries were recorded while 1,430 gynaecological patients were admitted. Ninety eight patients had ectopic gestation accounting for 1% of all deliveries and 6.9% of all gynaecological admissions. The peak age group was 25-29 years (33%); 70 (74.5%) were married and 16 (17%) were students mostly undergraduates. Previous pelvic inflammatory disease 78 (83%), previous pelvic surgery 7 (7.4%) and previous history of ectopic pregnancy 2 (2.1%) were the most common risk factors in the patients. Lower abdominal pain 90 (95.7%), missed period 82 (87.2%), dizziness/fainting attack 57 (60.6%) and vaginal bleeding 50 (53.2%) were the predominant symptoms at presentation. There were 2 (2.1%) bilateral ampullary tubal ectopic with one unruptured ectopic which was treated with linear salpingostomy. Only one (1.1%) case of heterotrophic pregnancy. Open abdominal surgery was the treatment employed in all the patients. No Mortality was recorded.

**Conclusion:** The incidence of ectopic pregnancy can be reduced by putting in place measures to reduce induced abortion and pelvic inflammatory disease. In addition, early presentation, prompt diagnosis and efficient blood transfusion services will decrease the morbidity and mortality associated with ectopic pregnancy.

*Keywords:* ectopic pregnancy, clinical presentation, management, Nigeria

## **Introduction**

Ectopic pregnancy (EP) is a condition acknowledged from antiquity, and the first report appears in the writings of the famous Arabian physician Abulcasis (936-1013). Ectopic pregnancy is the implantation of a fertilised ovum in an area other than the endometrial lining of the uterus<sup>1</sup>. EP is a more appropriate term than extra uterine pregnancy, as a pregnancy may be located inside the uterus and yet be ectopic as in cervical and angular pregnancies. The

first successful salpingectomy was performed by Lawson Taut as a definitive treatment for tubal ectopic pregnancy in 1884<sup>2</sup>.

EP is a common major gynaecological condition all over the world, yet its diagnosis particularly the diagnosis of the chronic variety, can occasionally be difficult<sup>1</sup>. It is an indication for exploratory laparotomy and salpingectomy and one of the commonest female surgical emergencies

in developing countries<sup>3,4</sup>. It is a significant cause of maternal morbidity and mortality in Africa because of late presentation and diagnosis, delayed treatment and unfavourable socio-economic factors. EP is associated with impaired fertility, as the affected patient has only 40-60% chance of conception after surgery and the risk of recurrence is 7-15%<sup>1,3</sup>. It is the leading cause of pregnancy related death in the first trimester and accounts for 9% of all pregnancy related death<sup>5</sup>.

The incidence of EP varies in different parts of the world depending on the presence of predisposing factors particularly pelvic infection<sup>6,7</sup>. The highest incidence of 1 in 21 deliveries was reported in South Korea<sup>8</sup>. Jamaica has an incidence of 1 in 28 deliveries<sup>9</sup>. One in 44 deliveries in Ghana<sup>10</sup>. In Nigeria it varies between 1 in 23 to 1 in 357 deliveries<sup>3,11</sup>. The incidence in Ilorin rose to 1 in 69 deliveries in 1998 from 1 in 111 deliveries in 1991<sup>12,13</sup>. EP is a global problem and has shown a rising incidence during the last three decades the world over. The increase is associated with increase in pelvic infections, advances in assisted reproductive technology, tubal surgeries and sterilisations, use of intrauterine contraceptive device and earlier diagnosis with more sensitive methods of cases that otherwise would have resolved with out causing any symptom<sup>2,5,24</sup>. Ten to fifteen percent (10 –15%) of all ectopic pregnancies in U.K. occurred after ART<sup>15</sup>. In the USA the incidence is 22 per 1000 live birth while in the UK it is 1 per 150 mature birth<sup>15</sup>.

The risk factors for developing EP include a history of pelvic inflammatory disease, prior tubal surgery, an intrauterine devices in situ, conception following induction of ovulation (particularly with menopausal gonadotropins), history of previous ectopic gestation, intrauterine diethylstilbesterol exposure, history of infertility, conception as a consequence of in vitro fertilisation and embryo transfer (IVF/ET), gamete intrafallopian transfer (GIFT), zygote intrafallopian transfer (ZIFT). Advanced maternal age has also been implicated<sup>4</sup>.

At least 95% of ectopic pregnancies are located in one of the fallopian tubes. The majority of ectopic pregnancies implant in the ampullary region of the fallopian tube, followed by the isthmus, the fimbrial and the cornual portion. Other rare sites are the cervix, ovary and abdominal cavity<sup>4</sup>. Multiple ectopic pregnancy may occur, including both tubes as well as a combined intrauterine and extra uterine pregnancy (heterotrophic pregnancy)<sup>16</sup>. The incidence of heterotrophic pregnancy is 1 in 30,000 pregnant<sup>17</sup>. In Ilorin the incidence is 1 in 40,917 deliveries<sup>18</sup>. The advance in the management of EP is placing emphasis on early detection of unruptured ectopic gestation with use of highly sensitive HCG measurement kit, high resolution USS and laparoscopy<sup>14,19,22</sup> in order to reduce the burden of increased maternal morbidity/mortality and

consequent reproductive failure from surgical intervention on ruptured ectopic gestation.

The definitive management of ruptured tubal pregnancy is still the same salpingectomy first performed by Lawson Taut in 1884<sup>5,14</sup> but the trend is moving away from open salpingectomy. In 1953, Stromme described the use of linear salpingectomy as a conservative approach to an unruptured tubal pregnancy<sup>14</sup>, other conservative surgical management include milking, and mid-tubal resection and anastomosis<sup>14</sup>. The higher possibility of persistent trophoblastic disease and recurrence of tubal ectopic gestation following tubal milking and tubal resection and anastomosis respectively limit their routine use as conservative surgical methods.

Medical treatment of EP include the use of methotrexate (MTX), Actinomycin D, mifepristone, 20% potassium chloride, 50% glucose etc<sup>14,21</sup> some of the drugs are given intravenously or intramuscularly while others may be given locally either laparoscopically or ultrasound guided. The logical indications for EP medical treatment are: early EP without peritoneum effusion, with hCG < or = 5000 mIU/ml, without embryonic cardiac activity at sonography. The medical therapy by intramuscular injection of MTX at 1 mg/kg gives a success rate of 91.8% similar to the success rate of intra tubal injection of MTX under sonographic control<sup>23</sup>.

Expectant management is used for ectopic pregnancy detected before 6 weeks with the aim that it will resolve spontaneously<sup>22</sup>. Expectant management is employed in limited clinical situations: when ectopic pregnancy is suspected, but Transvaginal ultrasound fails to reveal extrauterine findings suggestive of ectopic pregnancy and the beta-human chorionic gonadotropin (hCG) concentration is low (d<200 mIU/mL) and declining (fall by atleast 15% in the first 24hours)<sup>23</sup>. In addition, the patient must be aware of, and accept the risks of, expectant management and be willing and able to comply with follow-up. Unfortunately, 99% of the cases seen in our subregion have already ruptured and are treated by salpingectomy. The objective of this study was to review the incidence, predisposing factors, clinical presentation and management of ectopic pregnancy at the University of Ilorin Teaching Hospital Ilorin, Nigeria. The outcome of this study would reveal findings that would help improve the current ectopic pregnancy situation in the country for the benefit of the vulnerable groups.

#### **Materials and Methods**

This was a retrospective study of ectopic pregnancies at University of Ilorin Teaching Hospital, Ilorin from 1<sup>st</sup> of January 2004 to 31<sup>st</sup> December 2007. The case notes of the patients with ectopic pregnancy were traced through the gynaecology emergency, gynaecology ward and theatre registers. The labour ward register was used to ascertain

the total number of deliveries for the same period. Information on biosocial data, clinical presentation, predisposing factors for the disease, findings at laparotomy and type of surgery were extracted. All the surgeries were by open laparotomy and general anaesthesia with endotracheal intubation was used in all the cases. Ninety eight (98) patients were treated, of these 94 case files had adequate information for analysis. The data obtained were recorded using tables. Statistical analysis was done using a commercial statistical package (SPSS/PC version 11.0, SPSS Inc., Chicago, Ill, USA).

**Results**

During the period (January 1<sup>st</sup> 2004 to 31<sup>st</sup> December 2007) under review, there were 10,054 deliveries and 98 cases of ectopic pregnancy, giving overall incidence of 1% (1 in 103 deliveries). Table i shows the age, parity and occupational distribution of the patients. Their age range was from 18years to 45years. The mean age was 28.7years representing 33% followed by the age group 30-34years (26.6%) while the least incidence occurred in the age group 20 years (4.3%). Nulliparous patients constituted 36 (38.3%) while grandmultiparous patient constituted 13 (13.8%). Thirty eight (40.4%) were traders, 17 (18.1%) were civil servants. 16 (17%) were students mostly undergraduates, 11 (11.7%) were artisans as well as Housewives, while 1(1.1%) of the patient was unemployed. Majority of the patients 70 (74.5%) were married, 22 (23.4%) were single while 2 (2.1%) patients were separated/Divorced.

Gestation (GA) at presentation was shown in table ii and it was found that majority 65 (69.1%) of the patient presented at Estimated Gestational Age (EGA) of between 6-10/52. The least GA at presentation was EGA of >12/52 with 2 (2.1%) patients. The clinical presentations were presented in table iii revealing abdominal pain as the commonest presenting complaint in 90 (95.7%) of the patients followed by missed period in 82 (87.2%) patients. Fifty (53.2%) of the patients had irregular vaginal bleeding while only 2 (2.1%) of the patient had shoulder tip pain. Majority (83%) of these patients had history of previous pelvic infection and previous history of pelvic surgery was obtained in 7 (7.4%) cases. No identifiable predisposing factors were found in 7 (7.4%) patients. Two (2.1%) patients had history of previous ectopic pregnancy. See table iv. Table v shows the commonest site of ectopic in this study being ampullary as found in 53 (56.4%) of the patients. There were 2 cases of bilateral ampullary ectopic gestation, 3 of the tubes were ruptured with 1 unruptured tube. A case of heterotrophic pregnancy was also documented: this was confirmed by ultrasound diagnosis of a non-viable intrauterine gestation with concurrent ruptured tubal gestation; evacuation of product of conception was carried out following salpingectomy. There was a case of broad ligament ectopic, representing 1.1%.

Salpingectomy was the surgical procedure of choice performed in 80 (85.1%) patients while salpingo-oophorectomy was performed in 8 (8.5%) patients, 2 (2.1%) patients had cuff salpingostomy. One (1.1%) patient had liner salpingostomy. Subtotal hysterectomy and left adnexectomy was performed in 1 (1.1) patient with broad ligament ectopic on account of uncontrollable haemorrhage. Majority (95%) were operated within an hour of presentation. Anaemia occurred in 90 (95.7%) of patients, one- third (30) of these patients had two or more pints of blood transfused while two-third (60) did not receive blood transfusion. Two (2.1%) had thrombophlebitis and one (1.1%) patient had superficial wound dehiscence. There was no mortality and all the patients were discharged within 8 days of admission.

**Table i: Age, parity and Occupational distribution of the patients (n=94)**

Age	Frequency/(no)	Percentage(%)
<20	4	4.3
20-24	16	17.0
25-29	31	33.0
30-34	25	26.6
35-39	11	11.7
>40	7	7.4
<b>Parity</b>		
0	36	38.3
1	12	12.8
2	15	16.0
3	10	10.6
4	8	8.5
5	7	7.4
6	6	6.4
<b>Occupation</b>		
Trading	38	40.4
Civil servant	17	18.1
Schooling	16	17.0
Artisans	11	11.7
House wife	11	11.7
Unemployment	1	1.1

**Table ii: Duration of Amenorrhea**

Duration (week)	Frequency/(no)	Percentage
Unsure	11	11.7
<6	11	11.7
6-10	65	69.1
10-12	5	5.3
>12	2	2.1
<b>Total</b>	<b>94</b>	<b>100</b>

**Table iii: Symptoms in patients with ectopic pregnancy**

Presenting complaints	Frequency/ (No)	Percentage
Abdominal pain	90	95.7
Missed period	82	87.3
Dizziness/fainting attack	57	60.6
Vaginal bleeding	50	53.2
Nausea/vomiting	24	25.5
Shock	7	7.4
Diarrhoea	4	4.3
Shoulder tip pain	2	2.1

\*Many patients had more than one symptom

**Table iv: Predisposing factors to ectopic pregnancy**

Predisposing factors	Frequency/ (no)	Percentage
Previous pelvic infection/ Pelvic adhesion (with no Surgery)	78	83
Previous pelvic surgery	7	7.4
Not identified	7	7.4
Previous ectopic	2	2.1
<b>Total</b>	<b>94</b>	<b>100</b>

**Table v: Site of ectopic pregnancy**

Site	Frequency/ (no)	Percentage
*Ampullary	53	56.4
Isthmic	14	14.9
Fimbriae	10	10.6
Ovary	8	8.5
Cornual	7	7.4
Abdomen	2	2.1
Broad ligament	1	1.1
** NS	1	1.1
Cervical	-	-

\* 2 cases of bilateral ampullary tubal ectopic. 3 sites ruptured while one was unruptured.  
1 case of heterotrophic pregnancy (ampullary and intrauterine abortion)

\*\* Not stated.

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## Discussion

The incidence of ectopic pregnancy in this series is 1 in 103 deliveries or 1% . This is lower than the incidence of 1.4% and 1.4% reported in the same centre in 1992 and 1996 respectively. This 0.4% fall in the incidence agrees with the fall in incidence in the range of 0.2-4.4% reported from other studies in Africa<sup>1,13,16</sup> but fall short of the 2-4 fold increase noted in the western world. The availability of Assisted reproductive techniques, improved method of diagnosis and reporting and more tubal sterilisation may contribute to the rising incidence in the western world<sup>2-4</sup>. The possibility of underreporting could be responsible for this low incidence as there are many private hospital in Ilorin which possibly handle cases of ectopic pregnancy.

Fifty one (54.3%) were below 30 year of age while 67.1% are of low parity (0-2). This women are in their prime of reproductive years and are likely to be subjected to a lot of emotional, psychological and social trauma in our environment where a lot of premium is placed on child bearing<sup>3,12</sup> since there is only 40-60% chance of conceiving after surgery<sup>1,3</sup> and the chance of recurrence is 7- 15%<sup>1,3</sup>.

The commonest predisposing factor identified in this study was previous pelvic infection (with no surgery) in 78 (83%) patients. This group represents those with history of sexually transmitted infections, evidence of pelvic sepsis following induced or spontaneous abortion. This is similar to other reports<sup>1,3</sup>.

The major complaint in this series was abdominal pain in 90 (95.7%) patients followed by missed period in 82 (87.2%) patients while vaginal bleeding occurred in 50 (53.2%) patients. Many patients had multiple symptoms. The most significant clinical signs were lower abdominal tenderness, pallor and cervical excitation tenderness. This is in keeping with other reports<sup>3,9,12</sup>. For women with chronic type due to slow leaking of the tubal pregnancy, high index of suspicion is required during evaluation. To this group is the axiom that any woman within the reproduction age who presents with unexplained anaemia and or collapse in the first trimester should be presumed to have ectopic pregnancy until proven otherwise<sup>1,4</sup>.

Fallopian tube was the commonest site of ectopic gestation with 53(56.4%) ampullary ectopic pregnancies. There was no cervical ectopic pregnancy. Only one (1.1%) unruptured tubal pregnancy, this is in keeping with other reports<sup>12</sup>. Also, surgery is the treatment of choice for the majority of patients with ectopic pregnancy, but the trend is moving way from open laparotomy to laparoscopy<sup>4</sup>. However majority of patients in this environment present with massive intra-abdominal bleeding which is an absolute contraindication to laparoscopy.

In this study 80 (85.1%) patients had unilateral salpingectomy as result of gross tubal destruction secondary to rupture. Two (2.1%) patients had cuff salpingostomy while 1(1.1%) patient with unruptured tubal pregnancy had linear salpingostomy. These are methods of conservative surgical procedure with intra uterine pregnancy rate of (60% vs 40%)<sup>4,14</sup>. One complication of these procedures is incomplete evacuation of product of conception with persistent trophoblastic tissue within the fallopian tube<sup>23</sup>. Salpingo-oophorectomy was performed in 8 (8.5%) patients with grossly damaged ipsilateral ovary.

The commonest complication of ectopic pregnancy in this study was post operative anaemia found in 90 (95.7%) of the patients. This is due to late presentation with massive haemoperitoneum. No death was recorded in this study. This may be as a result of availability of ultrasound scan services which aid in early diagnosis, prompt surgical intervention by the attending clinician and availability of blood transfusion services our centre.

The problem of loss of reproductive function has serious consequence on the future married life of the women in

our community. Conservative plastic surgical procedures have a role in the management of tubal pregnancy especially in young woman of low parity. Advances in micro surgical technique of tubal operations will improve the chance of future fertility in such women<sup>16</sup>.

Health education on the need to present early in pregnancy, discouraging the practice of unprotected sexual intercourse with multiple sexual partner, early diagnosis and prompt treatment of sexually transmitted infections and proper management of spontaneous and induced abortion by unskilled individual, liberalisation of abortion laws and provision of qualitative, affordable and accessible maternity and family planning services will further reduce the incidence of ectopic pregnancy and morbidities associated with the condition.

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