

## **ECTOPIC PREGNANCY AT AMINU KANO TEACHING HOSPITAL, KANO, NIGERIA.**

***Dr Omole-Ohonsi A. Dr Olayinka H.T. Dr Attah R.A.***

*Department of Obstetrics and Gynaecology, Bayero University/Aminu Kano Teaching Hospital, Kano.*

### **ABSTRACT**

**Background:** Ectopic pregnancy is an important cause of maternal morbidity and mortality in developing countries like Nigeria. The incidence of ectopic pregnancy is on the increase worldwide.

**Objective:** To determine the influence of age and parity on the incidence of ectopic pregnancy, findings at operation and pattern of treatment of ectopic pregnancy at Aminu Kano Teaching Hospital (AKTH), Kano, Nigeria.

**Methods:** It was a descriptive retrospective study of 178 patients that were admitted with ectopic pregnancy at Aminu Kano Teaching Hospital between January 2006 and December 2009.

**Results:** The incidence of ectopic pregnancy was 11.7 per 1000 deliveries, 14.7% of all gynaecological operations and 74.8% of all gynaecological emergency operations. Modal age and parity were 25-29 years age group, and para 1. Ruptured ectopic pregnancy (75%), right tubal ectopic pregnancy (58%) and ampullary implantation (66.9%) were the most common presentations. Hemoperitoneum of greater than 1 litre occurred in 62.7% of the cases, but only 11.8% had autotransfusion of blood. There was a rising trend in the incidence of ectopic pregnancy during the study period.

**Conclusion:** Ectopic pregnancy is the commonest gynaecological emergency at AKTH. Early girl marriage made ectopic pregnancy to be more associated with older parous women. Ruptured ectopic pregnancy was the commonest presentation, which calls for community campaign to encourage early presentation in the hospital. Autotransfusion where not contraindicated should be used more in the management of ruptured ectopic pregnancy.

**Key words:** Ectopic pregnancy, incidence, operative findings, pattern of treatment

### **INTRODUCTION**

Ectopic pregnancy defines the implantation and growth of the conceptus outside the normal uterine cavity<sup>1,2</sup>.

The incidence of ectopic pregnancy varies widely being higher in developing countries than developed ones<sup>2</sup>. In South Korea it is 1 in 21 deliveries<sup>3</sup>, in Ghana 1 in 24.4 deliveries<sup>4</sup>, in the United State of America, 1 in 241 to 280 deliveries<sup>5</sup>. In Nigeria however, studies done in Lagos<sup>6</sup>, Benin<sup>7</sup> and Jos<sup>8</sup> showed incidence of 23.1 per 1000 deliveries, 16.8 per 1000 deliveries and 17.4 per 1000 deliveries respectively. A previous study in AKTH showed an incidence of 10.6 per 1000 deliveries<sup>9</sup>.

The incidence of ectopic pregnancy has been said to be rising over the years<sup>10</sup>. The incidence in the United State of America rose from 45/1000 deliveries in 1970 to 19.7 per 1000 deliveries in

1992<sup>10</sup>. In the United Kingdom, it has increased from 9.2 per 1000 deliveries in 1991 – 1993 to 11.0 per 1000 deliveries in 2000 - 2002<sup>11</sup>.

The common risk factors associated with ectopic pregnancy include pelvic inflammatory disease (PID), use of Intrauterine Contraceptive Device (IUCD), increased maternal age, previous pelvic surgery, history of infertility, early age of intercourse, multiple sexual partners, cigarette smoking, Inutero exposure to diethylstilbesterol,

---

**Correspondence:** Dr. Omole-Ohonsi A,  
Department of Obstetrics and Gynaecology,  
Aminu Kano Teaching Hospital, PMB 3452,  
Kano.

Tel No.- +234 80-37870540

Email: [aomohonsi@yahoo.com](mailto:aomohonsi@yahoo.com)

postabortal sepsis, puerperal sepsis and peritonitis arising from other causes like appendicitis<sup>2,12,13</sup>.

Ectopic pregnancy may present as an acute condition where there is tubal rupture, and chronic form in which there is an incomplete tubal rupture<sup>2,13</sup>. In the developing countries, the ruptured variety is the most common requiring emergency radical surgery<sup>2,12</sup>, and in Nigeria over 70% of

patients present with this variety<sup>14,15,16</sup>. In contrast however, in the developed countries of the world, the most common form of presentation is the unruptured variety allowing for conservative tubal surgery (linear salpingotomy, salpingostomy and milking of the tubes), medical treatment or expectant management at the time the patient presents<sup>12</sup>.

Ectopic pregnancy remains a significant cause of maternal mortality worldwide<sup>17-20</sup>. It is the leading aetiology of pregnancy related deaths in the first trimester, when it accounts for 90% of all pregnancy related death<sup>10</sup>. It contributes 6.5% and 8.6% of maternal mortality at Ilorin<sup>14</sup> and Lagos<sup>15</sup> respectively.

This study looks at the incidence, and operative findings which influenced the pattern of treatment at Aminu Kano Teaching Hospital.

## MATERIALS AND METHODS

This was a retrospective study of the cases of ectopic pregnancy that were managed at Aminu Kano Teaching Hospital, Kano, from January 2006 to December 2009. The study population consisted of all the patients admitted with ectopic pregnancy during the study period. The case records of patients were obtained from the Medical Records Department with supplementation from the theatre records.

The outcome measures were: influence of age and parity on the incidence of ectopic pregnancy, total number of deliveries, total gynaecological operations, total emergency gynaecological operations, method of management of ectopic pregnancy, laterality and segmental distribution of ectopic pregnancies, state of gestational sac at presentation, degree of haemoperitoneum and the type of transfusion done. The data obtained were analysed using the Epi – info software, and presented as tables, pie chart and doughnut. Chi-square test was used to compare qualitative

variables for significant difference. A P-value of less than 0.05 was considered significant.

## RESULTS

During the study period, there were a total of 178 patients admitted with ectopic pregnancy, and 15,214 deliveries, giving an incidence of 1.17% of the total deliveries or 11.7 per 1000 deliveries for ectopic pregnancy. Total gynaecological operations were 1,211, giving an incidence of 14.7% of all gynaecological operations, while the total gynaecological emergency operations were 238, giving an incidence of 74.8% of all gynaecological emergency operations. Nine folders could not be retrieved, giving a retrieval rate of 94.9%. There was no mortality.

Majority of the ectopic pregnancy (58%) affected the right tube, while 42% affected the left. Total salpingectomy was done in 94.7% of the cases, while partial salpingectomy was done in 5.3%. Among the cases of ectopic pregnancy, 62.7% of the cases had hemoperitoneum of greater than 1 litre. Homologous blood transfusion was given to 57.3% of patients, 30.9% were not transfused, and 11.8% had autotransfusion.

The age range was from 16 to 40 years, with a mean age of  $26 \pm 2.4$  years. The frequency of ectopic pregnancy with age has a dome shaped curve, with a modal age of 25 to 29 years. Age showed statistically significant difference in the incidence of ectopic pregnancy ( $X^2=119.30$ ,  $df=5$ ,  $P=0.00000$ ), with a modal age of 25 to 29 years. Fig 1.

The parity range was from 0 to 10, with a mean parity of  $3 \pm 0.7$ . The frequency of ectopic pregnancy was higher among parous women, with a modal parity of 1. Parity showed statistically significant difference in the incidence of ectopic pregnancy. ( $X^2=24.32$ ,  $df=5$ ,  $P=0.00018813$ ) Fig 2.

Ampullary tubal ectopic pregnancy constituted majority with 67.0%, followed by Isthmic ectopic with 16.0%, Fimbrial 15.0% and the least being Interstitial tubal ectopic pregnancy constituting 2.0%. Fig 3.

Among the cases, 75.2% of were ruptured at presentation, 14.8% were slowly leaking, 5.3% were tubal abortion and 4.7% were unruptured. Fig 4.

The yearly trend in the incidence of ectopic pregnancy showed that it increased yearly from 2006(1.09%), 2007 (1.17%), 2008 (1.36%) to 2009 (1.38%). Fig 5.

## DISCUSSION

The overall incidence of ectopic pregnancy in this study was 11.7 per 1000 deliveries (1.17%), which is higher than the incidence of 10.6 per 1000 deliveries reported by Uzoho et al<sup>9</sup>, in a previous study done in this centre in 2004. This may be due to increased literacy level in our community<sup>21,22</sup>, which may have made more women to be better informed to seek care and treatment, and also during this period, there was increase in the availability of ultrasound scan in making diagnosis of ectopic pregnancy in our community<sup>21</sup>.

The incidence of ectopic pregnancy that was reported in this study is within the range of 8.7 to 47.5 per 1000 deliveries in other studies from Nigeria<sup>6,8,18,19</sup>, but it is higher than reports from developed countries<sup>1</sup>. This may be because of the high prevalence of infective aetiological factors like PID, post abortal and puerperal sepsis, in Nigeria<sup>23,24</sup>.

The significant association between ectopic pregnancy and parous women in this study, does not agree with the study from Niger Delta region, where the most common factors that were associated with ectopic pregnancy were induced abortion (72%) and nulliparity (86%)<sup>24</sup>, which may probably be because women in this region delay marriage. In our predominantly Islamic community in north western Nigeria, early girl marriage which is common, makes our women not to be exposed to premarital unwanted pregnancies, induced abortions and post-abortal sepsis<sup>22</sup>, but because of aversion to western oriented programs like antenatal care, many of our women deliver at home poorly supervised, which exposed them to puerperal sepsis<sup>22</sup>. This may explain why ectopic pregnancy is more associated with parous women in our community.

The ampulla was found to be the most affected segment of the fallopian tube, which agrees with Swende et al<sup>16</sup> from Markudi, where the ampulla was involved in 77.1% of patients. This may be because the ampullary – isthmic junction is where fertilization of ovum takes place, and any delay in

transporting the embryo to the uterus may lead to implantation in this segment of the tube<sup>2</sup>.

Right sided tubal ectopics were found to be commoner than left sided tubal ectopics. This was also the finding of Gharoro et al in Benin City<sup>7</sup> and Musa et al in Jos<sup>8</sup>. The reason for the occurrence of more ectopic pregnancy on the right side, may be that apart from other infective aetiological factors like PID, post abortal and puerperal sepsis, appendicitis which is also implicated as a major aetiological factor only occur on the right side of the pelvis<sup>2,12</sup>.

All the patients that were managed for ectopic pregnancy were treated with salpingectomy, probably because majority of them came in with ruptured ectopic pregnancy and were parous. Presentation with ruptured ectopic pregnancy, which has been associated with delay in presentation, is a common feature of our gynaecological practice in developing countries<sup>7,24</sup>, and was responsible for why 77.7% and 88.5% respectively had total salpingectomy in the study from Jos<sup>8</sup> and Markudi<sup>16</sup>. This calls for community enlightenment and strong campaign for early presentation in the hospital.

The number of patients who had autotransfusion was low, despite majority of the patients coming in with haemoperitoneum of more than one litre, which is also the finding in other studies from Nigeria<sup>8,16</sup>. Increase in the use of auto transfusion should be encouraged, as this will reduce the presentation- intervention interval which has been found to be a key factor for good prognosis, and eliminate blood transfusion reaction, as it is a perfectly compatible blood. It will conserve donor's blood which are scarce in developing countries, and eliminate possible transmission of new infections like HIV and Hepatitis, and the problem of the window period in HIV transmission<sup>2,12</sup>. Autotransfusion is contraindicated when haemoperitoneum has occurred more than 24 hours, there is intra-abdominal infection, which may be indicated by foul odour from the abdominal cavity, or haemolysis of the red blood cells had occurred, when the blood will appear pale<sup>2</sup>.

This study showed that the incidence of ectopic pregnancy has been increasing over the years. This rising incidence has also been demonstrated in other studies; in Benue state, the incidence of

ruptured ectopic pregnancy rose from 0.65% in 2004 to 1.09% in 2006<sup>16</sup>, in Ilorin the incidence rose from 0.9% in 1987 – 91 to 1.4% in 2004<sup>23</sup>. In United State of America, it rose from 0.45% in 1970 to 1.97% in 1992 by about five fold<sup>10</sup>.

The rising trends in the incidence of ectopic pregnancy worldwide, has been attributed to the rising incidence of pelvic inflammatory disease, ovulation induction, invitro fertilization and Embryo–transfer techniques<sup>22</sup>, and also improvements in the means of diagnosis such as serum/urine pregnancy test and transvaginal ultrasonography<sup>20</sup>.

## CONCLUSION

Ectopic presentation is the commonest gynaecological emergency at Aminu Kano Teaching Hospital, and ruptured ectopic pregnancy was the commonest presentation. Early girl child marriage and childbearing made ectopic pregnancy to be commoner among parous women.

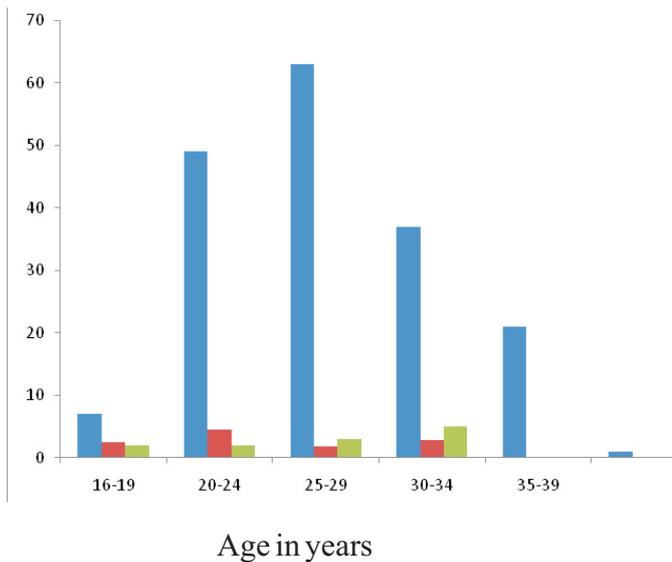
Community enlightenment on the prevention of the condition is needed to reduce the incidence, and campaign for early presentation in the hospital to improve the prognosis, and allow conservative options which will preserve fertility among those who require it. Increase in the use of autotransfusion where it is not contraindicated, should be encouraged.

## REFERENCES

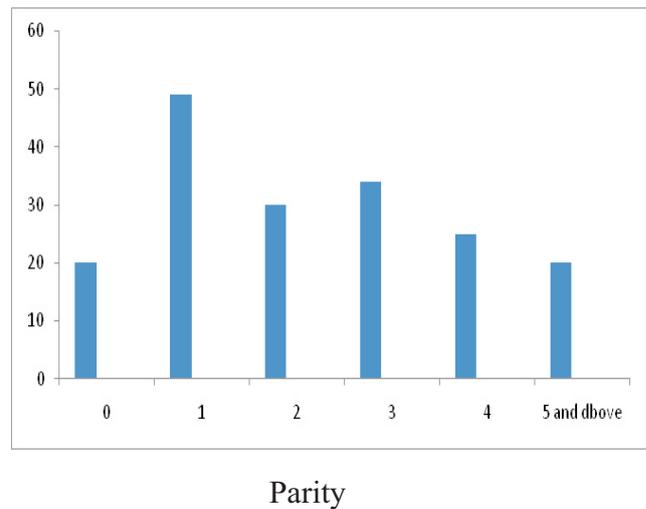
1. Russel JB. The aetiology of ectopic pregnancy. *Clinical Obstet Gynaecol*. 1987; 30: 181–90.
2. Kwawukume EY, Idrisa A. Ectopic pregnancy. In: Kwawukume EY, Emuveyan EE (ed). *Comprehensive Obstetrics in the tropics*. Accra Ghana. Ashante & Hittscher. 2002. pp 211–218.
3. D Kim DS, Chung SR, Park MI and Kim YP. Comparative review of diagnostic accuracy in tubal pregnancy, a 14 year survey of 1040 cases. *Obstet Gynaecol* 1987; 70: 547.
4. Obed SA, Wilson JB and Elkins TE. Diagnosing Unruptured Ectopic Pregnancy. *J Obstet Gynaecol*. 1994; 45: 21–25.
5. Davor Jurkovic. Ectopic pregnancy. In: Edmonds K (eds). *Dewhurst's textbook of obstetrics and gynaecology for postgraduates*, 6th edn. Blackwell, Oxford, 2007, pp 106–115.
6. Anorlu R.I, Oluwole A, Abudu O.O, Adebajo S. Risk factors ectopic pregnancy in Lagos, Nigeria. *Acta Obstet Gynaecol Scand*. 2005; 84(2): 184–8.
7. Gharoro EP, Igbafe AA. Ectopic pregnancy revisited in Benin City, Nigeria: Analysis of 152 cases. *Acta Obstet Gynaecol Scand*. 2002; 81(12): 1139–43.
8. Musa J, Daru PH, Mutahir JT, Ujah IA. Ectopic pregnancy in Jos, Northern Nigeria: prevalence and impact on subsequent fertility. *Niger J Med*. 2009; 18(1): 35–8.
9. Uzoho CC, Jido TA, Itodo AE, Zakari J. Ectopic pregnancy. *Nigerian Journal of Basic and Clinical Sciences*. 2004; 1: 10–20.
10. Advanced Report of final mortality statistics 1992. *Monthly vital statistics report 43 vol 43, No 6 suppl*. Hartsville MD; US Dept of Health Service, Public Health Service CDC, 1994.
11. RCOG (2004) why mothers die 2000 – 2002. The sixth report of confidential enquiries into Maternal Death in UK. 2000 – 2002: London RCOG Press.
12. Pam I.C., Otubu J.A.M. Ectopic pregnancy. In: Agboola A (ed). *Textbook of obstetrics and gynaecology for medical students*, 2nd edn. Heinemann Educational Books, Lagos, 2006, pp 101–105.
13. Peter SU, Garmel SH. Early Pregnancy Risks. In: DeChermey AH, Nathan L, Goodwin TM, Laufer N (eds). *Current Diagnosis and Treatment, Obstetrics and Gynaecology*. 10th edition. Washington, US. MCGrawHill Companies, Inc. 2007. PP 259–272.
14. Sotubo O and Aboyeji AP. Ectopic pregnancy in Ilorin, Nigeria. A five year review. *Nig Med Prac*. 1994; 27(314): 25–27.
15. Olatunji AD and Abdu OO. A review of maternal mortality in LUTH (1976 to 1985). *Nig Med Prac*. 1996; 31(1,2): 2–6.
16. Swende TZ, Jogo AA; Ruptured tubal pregnancy in Makurdi. *Nigerian Journal of Medicine*. 2008; 17(1): 75–77.
17. Pam I.C., Otubu J.A.M. Pelvic infections. In: Agboola A (ed). *Textbook of obstetrics and gynaecology for medical students*, 2nd edn.

- Heinemann Educational Books, Lagos, 2006, pp 61–69.
18. Mark H. Yudin MD, Daniel V, Landers MD. Pelvic Inflammatory Disease. *Curr Probl Obstet – Gynaecol fertil.* 2002. P 719.
  19. Polite I, Onwuhafua A, Gbadebo A, Adze J. Ectopic pregnancy at ABUTH, Northern Nigeria. *Trop J Obstet Gynaecol.* 2001; 18 (2): 82 – 86.
  20. Eze JN, Iloabache GC and Okafor MH. Presentation and management of ectopic pregnancy in UNTH, Enugu *Trop J Obstet Gynaecol.* 2003; 20 (1): 25.
  21. Omole-Ohonsi A, Mamman M. Value of Ultrasonography in the Diagnosis of Non-pregnancy Related Gynaecological Emergencies. *Kanem Journal of Medical Sciences.* 2008; 2(1):7-11.
  22. Omole-Ohonsi A, Ashimi OA. Maternal mortality review in Aminu Kano Teaching Hospital, Kano – Northern Nigeria. *Nigerian Journal of Basic and Clinical Sciences.* 2006; 3 (1-2): 10-16.
  23. Aboyeji AP, Fawole AA, Ijaiya. Trends in Ectopic pregnancy in Ilorin. *Nigerian Journal of Surgical Research* 2008; 4 (1): 75–77.
  24. Igberase G.O, Ebeigbe P.N, Igbekoyi O.F, Ajufoh B.I. Ectopic pregnancy: an 11-year review in a tertiary centre in the Niger Delta. *Trop Doct.* 2005; 35:175-177.

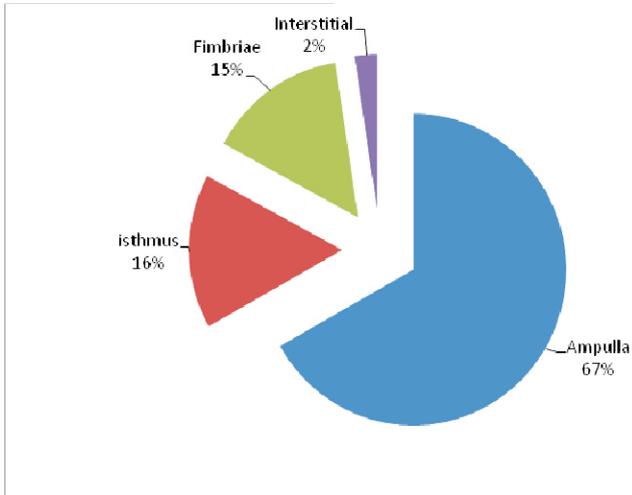
**Fig 1:**  
**Frequency distribution of age among patients with ectopic pregnancy**



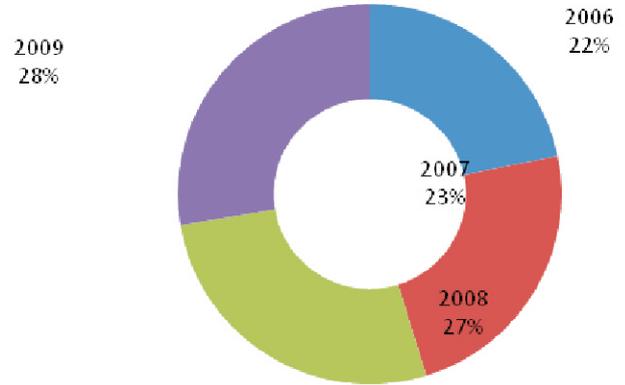
**Fig 2:**  
**Frequency distribution of parity distribution among patients with ectopic pregnancy**



**Fig 3:**  
Segmental Distribution of Ectopic Pregnancy Along the Fallopian Tubes



**Fig 4: State of the Gestational Sac**



**Fig 5:**  
Yearly trends in incidence of ectopic pregnancy in % of total deliveries

