

Ectopic Pregnancy - An 8-year survey

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SUMMARY

AUTHORS' CONTRIBUTION: (A) Study Design · (B) Data Collection · (C) Statistical Analysis · (D) Data Interpretation · (E) Manuscript Preparation · (F) Literature Search · (G) Funds Collection

Objective: The primary objective of the study was to determine the incidence of ectopic pregnancy in Kosovo during 2012-2019.

Design: Retrospective analysis.

Participants: Ectopic pregnancy admissions between January 2012 and January 2019.

Main Outcome Measures: Outcome measures for this study included the incidence, age group and mean gestational age, type of clinical presentation, site of ectopic pregnancy, complications, management modalities, mortality and morbidity.

Results: During 8 years there were 80.417 live births, of which 1004 cases have completed their pregnancy in the first trimester as ectopic pregnancies. During this period of 8 years at our institution, the incidence of ectopic pregnancy was 12.4 cases per 1000 pregnancies. Most women belonged to the age group between 21-30 years. The average gestational age was 6.3 weeks. 86.5 percent of hospitalized patients had at least one suspected symptom of ectopic pregnancy. The classic triad of symptomatology of ectopic pregnancy (amenorrhea, vaginal bleeding, and abdominal pain) was present in 53% (532 cases), 33.5% (336 cases) had at least one of these symptoms, while 13.5% (136 cases) were referred after an ambulatory visit. Out of a total of 1004 cases of ectopic pregnancy, 47% (472) were hemodynamically unstable on admission, while 53% (532) of the cases were hospitalized in a stable hemodynamic state. Hemodynamically unstable patients underwent surgery as soon as they were diagnosed. More than half of these patients needed a blood transfusion (52%). Haemodynamically stable patients with serum β -hCG levels less than 2000 mIU/mL have received expectant management. No maternal deaths were noted. The most common surgical procedures performed were unilateral salpingectomy 84.3% (847), while fallopian tubes were the most common site of ectopic pregnancy 94.7% (951).

Conclusion: The incidence of ectopic pregnancy in Kosovo is 12.4 per 1000 pregnancies, with the majority of patients presenting in their twenties. While the relatively small age of gestation on diagnosis is a good indicator, there is much to be done to increase the usage of laparoscopy and drugs as potential modes of management. Further research on this field is needed, to identify risk factors and potential obstacles to reducing the high number of hemodynamically unstable patients in admission opening the way for more conservative management.

Keywords: Amenorrhea; Ectopic pregnancy; Incidence; Mortality rates

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INTRODUCTION

Ectopic pregnancy is a life-threatening emergency and the most important cause of maternal mortality and morbidity in the first trimester [1]. Currently, there is an increasing trend in ectopic pregnancy due to the increasing number of pregnancies with IVF-ET procedures [2,3].

Other risk factors involved in the development of ectopic pregnancy are pelvic inflammatory disease (PID), previous ectopic pregnancy, tubal corrective surgery, documented tubal pathology, smoking, prior abortions, tubal sterilization, intrauterine devices, etc. [4].

The classic triad: amenorrhea, abdominal pain and vaginal discharge are noted only in a few cases. The mortality and morbidity of ectopic pregnancy in developing countries like Kosovo are not accurately known, mainly due to poor documentation and reporting. Awareness regarding risk factors will help identify early diagnosis and treatment. Early and correct diagnosis can be lifesaving and allows for non-surgical treatments to be applied. The study aimed to find the incidence, clinical features, management and mortality associated with ectopic pregnancy during a period of 8 years at our institution.

MATERIALS AND METHODS

This project was a retrospective study conducted at the University Clinical Centre of Kosovo, the only tertiary care hospital in Kosovo. Ethics Committee approval has been given for this study. The data were collected from the medical files of patients hospitalized during 2012-2019. Demographic data, clinical presentation, management modalities, complications, and the need for blood transfusion were recorded. The main outcome measures studied were; the incidence, age group and mean gestational age, type of clinical presentation, site of ectopic pregnancy, complications, management modalities, mortality and morbidity. Data were entered into an MS Excel and statistical analysis was performed using IBM-SPSS software version 23. Categorical variables are presented as numbers and percentages, and quantitative variables are presented as means and SD.

RESULTS

There are a total of 80.417 live births during this period, of which 1004 cases have completed their pregnancy in the first trimester as ectopic pregnancies. During this period

of 8 years at our institution, the incidence of ectopic pregnancy was 12.4 cases per 1000 live births (Tab. 1.).

During this 8-year evaluation, the number of ectopic pregnancies in Kosovo appeared with slight variations but generally with a stationary line (Fig. 1.).

Analysis of data for the distribution of cases by age shows that most of the patients were in the age group 21-30 years (Tab. 2.).

The classic triad of ectopic pregnancy (amenorrhea, vaginal bleeding and abdominal pain) was present in 53% (532 cases), 33.5% (336 cases) had at least one of these symptoms, while 13.5% (136 cases) were referred after ambulatory visit elsewhere (Fig. 2.). Abdominal pain was the most common symptom, presenting as unilateral or bilateral, continuous or intermittent. When it was accompanied by shoulder pain and difficulty breathing, it was a strong indicator of the presence of haemoperitoneum.

Out of a total of 1004 cases of ectopic pregnancy, 47% (472) were hemodynamically unstable on admission, while 53% (532) of the cases were hospitalized in a stable hemodynamic state. Hemodynamically unstable patients underwent surgery as soon as they were diagnosed. More

than half of these patients needed a blood transfusion (52%). Haemodynamically stable patients with serum β -hCG levels less than 2000 mIU/mL have received expectant management. No maternal deaths were noted.

The most common surgical procedures performed were unilateral salpingectomy 84.36% (847); bilateral salpingectomy 7.37% (74) followed by salpingo-oophorectomy 6.47% (65), cornual resection 1.4% (14) and salpingotomy 0.4% (4). The average gestational age was 6.3 weeks. The most common site of ectopic pregnancy was: fallopian tubes (ampullary and isthmic parts) in 94.7% (951 cases).

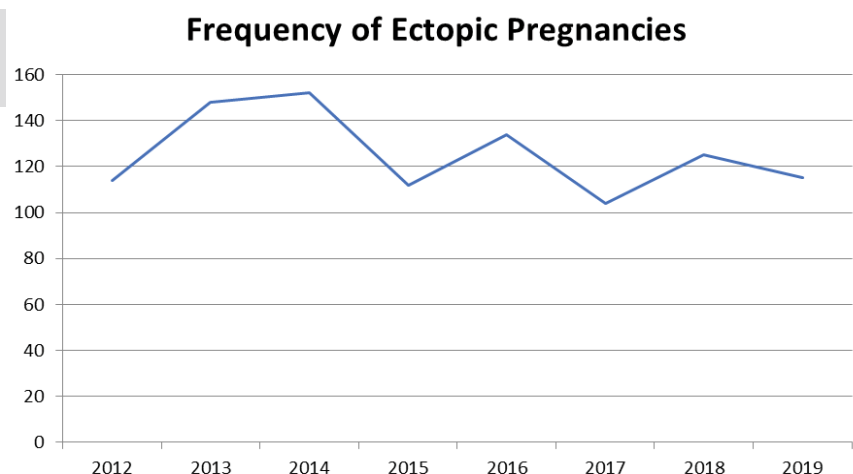
DISCUSSION

Worldwide, the incidence of ectopic pregnancy has increased tremendously. For example, in the United States, the incidence of ectopic pregnancy has increased steadily since 1970 [5]. In a study published in 1992, ectopic pregnancies accounted for about 2 per cent of the reported pregnancies [6,7]. In another study in 2014 by Shetty S. et al., the prevalence of ectopic pregnancy is reported between 1-3% worldwide [8].

Tab. 1. Incidence of ectopic pregnancy by year, in Kosovo.

Years	Total Number of Live Births	Frequency of Ectopic Pregnancies	Relative Frequency	Incidence (%)
2019	9656	115	0.11	1.19
2018	10056	125	0.12	1.24
2017	9665	104	0.10	1.07
2016	9937	134	0.13	1.34
2015	9397	112	0.11	1.19
2014	10030	152	0.15	1.51
2013	10983	148	0.14	1.34
2012	10693	114	0.11	1.06
Total	80417	1004	0.12	1.24

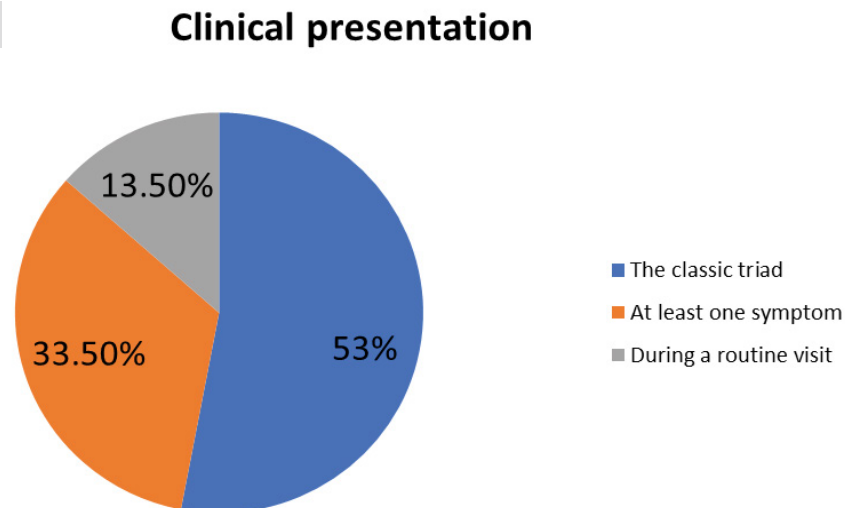
Fig. 1. Frequency of ectopic pregnancies in Kosovo, during 2012-2019.



Tab. 2. The distribution of ectopic pregnancy cases by age group.

Age group (years)	Number of ectopic pregnancies (n=1004)	Percentage (%)
< 20	22	2.2
21-30	551	54.8
31-40	387	38.5
41-50	45	4.5
>50	0	0

Fig. 2. Type of clinical presentation.



In our study, the incidence of ectopic pregnancy was 12.4 cases per 1000 pregnancies. This incidence is the same as the incidence of ectopic pregnancy in the United States fifty years ago. Worldwide, this increase in ectopic pregnancies diagnosis is multifactorial; due to the real increase of the disease in populations, the increase of risk factors for this disease in certain populations and due to the technological advancement that helps in the early diagnosis of cases. According to this study, in the population of Kosovo, the incidence of ectopic pregnancy remains low for many reasons and it might be attributed to isolated population, traditional families, cultural and religious concepts for sexual intercourse and marriage.

Most patients in our study were in the age group of 21-30 years. We think that this is because this age group has the most chance of conception, irregular of contraception, and early marriage, which is also related to other studies [8,9]. Our study shows that 47% patients with of ectopic pregnancies were hemodynamically unstable, which was the same as the study by Breen JL [10]. Because of this condition, surgical management was a necessity and was performed as soon as the diagnosis was made. In developing countries, the majority of patients are diagnosed after tubal rupture. Our Clinic, being the only tertiary health care centre in the country bears the responsibility for almost all of the cases in Kosovo. Due to delayed diagnosis and late referral, most of the cases (53%) referred from secondary centres presented with ruptured tubes. More than half of these patients referred from secondary centres needed a blood transfusion (52%) [11]. In our study, the most common surgical procedure done was unilateral salpingectomy, followed by bilateral salpingectomy, salpingo-oophorectomy, and salpingotomy, similar to the results of Webster HD, et al. [12]. The average gestational age of ectopic pregnancies was 6.3 weeks, similar to the study of Aflatounian A [13]. Most often women are not

aware of their pregnancy status and we may miss ectopic pregnancy cases as these women may present to general practitioners with non-gynaecological symptoms. As in most studies, fallopian tubes were the most common site of ectopic pregnancy followed by ovarian, abdominal and cervical ectopic pregnancy, etc. [14-18].

CONCLUSION

The incidence of ectopic pregnancy in Kosovo is 12.4 per 1000 pregnancies, with the majority of patients presenting in their twenties. In Kosovo, the incidence of ectopic pregnancy still remains low for many reasons, and this fact, might be attributed to isolated population, traditional families, cultural and religious concepts for sexual intercourse and marriage, etc. The relatively small age of gestation on diagnosis is a good indicator; there is much to be done to increase the usage of laparoscopy and drugs as potential modes of management. Further research on this field is needed, to identify risk factors and potential obstacles to reducing the high number of hemodynamically unstable patients in admission opening the way for more conservative management. During the period of this study, no maternal deaths were noted.

AUTHOR'S CONTRIBUTIONS

All authors have read and approved the final version of the manuscript.

INFORMED CONSENT

Informed consent was not needed.

CONFLICT OF INTEREST

The authors declare that there is no financial interest or conflict of interest in this paper.

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