



Factors Associated With Frequency of Ectopic Pregnancy

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Abstract

Background/Aim: Ectopic pregnancy is defined as a pregnancy outside the uterine cavity, most often in the fallopian tube. It is a life-threatening condition and requires early diagnosis and adequate care. Aim of this study was to examine the frequency of ectopic pregnancy, as well as the influence of parity, age of patients and previous *in vitro* fertilisation (IVF) procedure on the occurrence of ectopic pregnancy.

Methods: A retrospective research was conducted in the Clinic for Gynaecology and Obstetrics of the University Clinical Centre of the Republic of Srpska from 1st of January 2016 up to 31 of December 2018, which included 125 hospitalised patients with a confirmed diagnosis of ectopic pregnancy. Data on the age of patients, parity and previous IVF, as well as the method of treatment of patients with ectopic pregnancy were analysed and compared.

Results: In the observed period, there were a total of 9781 births and in the same period, 125 patients with a diagnosis of ectopic pregnancy were hospitalised, which is 1.27 %. Pregnancy did not occur after IVF. Laparoscopy and drug therapy are represented almost equally, depending on the clinical picture and the wishes of the patients and open access was represented only sporadically.

Conclusion: According to this research, the onset of ectopic pregnancy is not affected by age, parity and previous IVF, which does not fit into the results of world research. The most common form of treatment in our country is both laparoscopy and medical approach and open access occurs only sporadically, which fits into the recommendations of the relevant guides.

Key words: Ectopic pregnancy; Parity; Age; Treatment.

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Introduction

Ectopic pregnancy (lat. *graviditas extrauterina, ectopica*) is defined as pregnancy outside the uterine cavity, most often in the fallopian tube.¹ Since it is a life-threatening condition, it requires early diagnosis and adequate care.² Ectopic pregnancy is a more comprehensive term, which refers to any nidation of a fertilised egg outside the uterus, including cervical and interstitial pregnancy. The incidence of ectopic pregnancy is between 1.5 and 2 % of all pregnancies.³

The development of ectopic pregnancy can be influenced by all factors that participate in the mechanism of transfer of a fertilised egg through the fallopian tube.³ Previous abdominal and pelvic surgeries, pelvic infection, *in vitro* fertilisation (IVF) procedure, intrauterine device (IUD) increase the risk of ectopic pregnancies, as well as the mother's age, early onset of sexual life and number of partners.⁴ The triad of symptoms characteristic of ectopic pregnancy is: pain (95 %),

amenorrhoea (75 %) and vaginal bleeding (60 %).³ Also, as symptoms of ectopic pregnancy, dizziness, vertigo, pregnancy symptoms and urge to defecate occur.⁵ The subacute form occurs in 70-80 % of cases and is the most common clinical form of ectopic pregnancy.^{3, 5} Examination reveals cervical tenderness, signs of peritoneal irritation and sensitivity of the vaginal arches.³ The diagnosis of ectopic pregnancy includes: history, gynaecological examination, ultrasound examination and determination of serum The β -subunit of the human chorionic gonadotropin (β -hCG).⁴ Treatment of ectopic pregnancy can be performed expectedly (passively), medically and surgically.^{3, 5} The choice of treatment is based on β -hCG values, ultrasound findings, physician experience, clinical picture and age of the patient, as well as the woman's reproductive history.^{3, 5} If a tubal pregnancy lasted for 8 weeks or longer, it is necessary to give anti-D serum in RhD negative patients.³

Aim

The aim of this study was to examine the frequency of ectopic pregnancy, as well as the influence of parity, age of patients and previous IVF on the occurrence of ectopic pregnancy. Also, the aim of this paper is to examine the ways of treating ectopic pregnancy.

Methods

In the Clinic for Gynaecology and Obstetrics of the University Clinical Centre of the Republic of Srpska (CGO UCC RS), a retrospective study was conducted in the period from 01.01.2016. to 31.12.2018., which included 125 hospitalised patients with a confirmed diagnosis of ectopic pregnancy. For the purposes of the research, data from the patient protocol books for the specified period were used, as well as the corresponding data from the Clinical Information System (CIS). Data on the age of patients, parity and previous IVF, as well as the method of treatment of patients with ectopic pregnancy were analysed and compared. The Chi-squared test was used for statistical data processing and those with $p < 0.05$ were considered as statistically significant difference.

Results

In the observed period, a total of 125 patients with a definitive diagnosis of ectopic pregnancy were hospitalised at the CGO UCC RS. In the mentioned period, there were a total of 9781 births. Observed by years in 2016, there were 3302 births and in the same period, 34 patients with a diagnosis of ectopic pregnancy were hospitalised, which is 1.03 %, then in 2017 there were 3198 births and 46 patients with ectopic pregnancy were hospitalised, which is 1.44 %, while in 2018 there were 3281 births and there were 45 or 1.37 % of hospitalised patients with ectopic pregnancy.

The number and percentage of hospitalised patients with ectopic pregnancy in relation to the total number of births is shown in Figure 1.

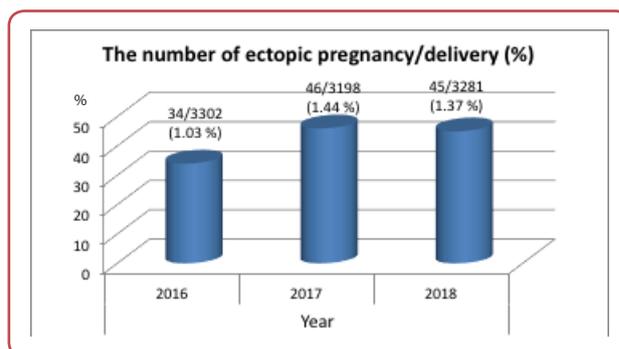


Figure 1: The number and percentage of hospitalised patients with ectopic pregnancy in relation to the total number of births

According to age, patients were divided into two groups, which is shown in Figure 2.

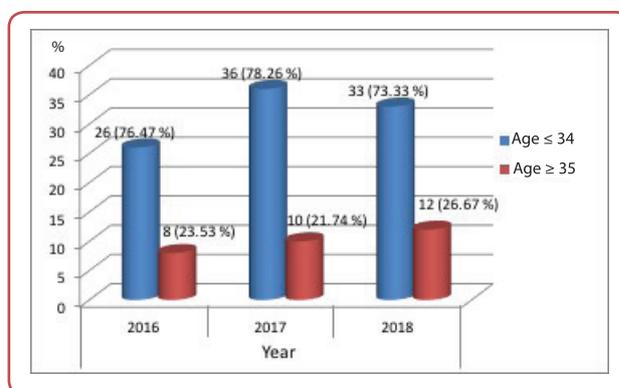


Figure 2: The ectopic pregnancy in relation to the age of patients

Statistical processing did not determine the statistical significance of the influence of individual groups of patients on the occurrence of ectopic pregnancy ($p > 0.05$). According to parity, patients were divided into three groups: nulliparous, pluriparous and multipaired, which is shown in Figure 3.

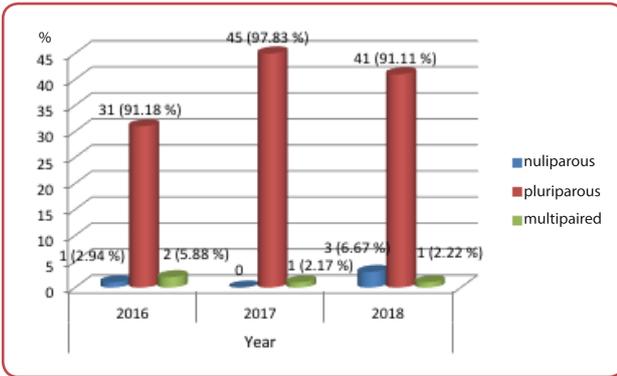


Figure 3: The ectopic pregnancy in relation to the parity of patients

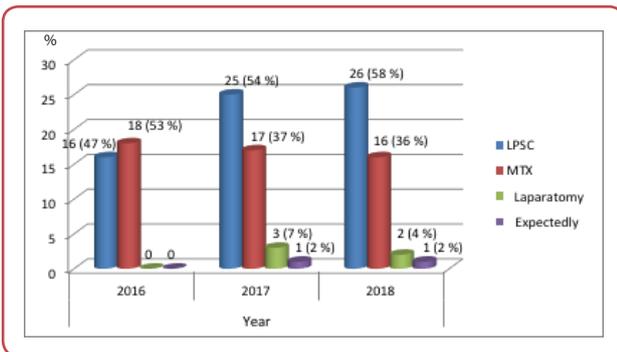


Figure 4: The distribution of individual methods of treatment of patients with ectopic pregnancy; LPSC: laparoscopic salpingectomy; MTX: methotrexate;

Statistical processing did not determine the statistical significance of the influence of individual groups on the occurrence of ectopic pregnancy ($p > 0.05$). In the observed period, no ectopic pregnancy occurred after IVF. The distribution of individual methods of treatment of patients with ectopic pregnancy is shown in Figure 4.

Discussion

Ectopic pregnancy is a potentially life-threatening condition and requires early diagnosis and adequate care. Ectopic pregnancy is the most common cause of maternal death in the first trimester of pregnancy and at the same time the

third most common cause of death pregnancy-related in general.³ According to a study by Costa et al, the incidence of ectopic pregnancy in France is 1.6 % and Irvine and Setchell in their study showed a declining incidence of ectopic pregnancy. Incidence of ectopic pregnancy in the United Kingdom, over 9 years, decreased from 2.4 % to 1.6 %.^{6,7} According to a study by Stulberg et al⁸ in the United States, the incidence of ectopic pregnancy is 1.42 % of all pregnancies. The results of world studies do not show a large deviation in the frequency of ectopic pregnancies and results from this study also fit into the results of world studies. There are several risk factors that affect the occurrence of ectopic pregnancy and some of them are age, parity, previous IVF, which were analysed.

Bouyer et al described a significant association between ectopic pregnancy and a woman's age.⁹ A study by Sivalingam et al also found that the risk of developing an ectopic pregnancy increases with a woman's age and increases significantly above the age of 35.¹⁰ According to the research presented in this paper, the patient's age is not a statistically significant risk factor for ectopic pregnancy, nor is parity.

According to the world literature, the IVF procedure increases the probability of ectopic pregnancy, but in this study, no ectopic pregnancy occurred after IVF, so this results do not match the results in the world literature.¹¹ Ectopic pregnancy is one of several conditions in medicine that can be treated in three ways: expectantly, medically and surgically. According to the guidelines of the Royal College of Obstetricians and Gynaecologists, the expectorant method is recommended in clinically stable women, with ultrasound-verified intact ectopic pregnancy and when the β -hCG finding is less than 1500 IJ/L. Also, according to the recommendations of the guide, laparoscopy has an advantage over the open approach and drug therapy with Methotrexate is recommended for ectopic pregnancies in women who have reduced fertility, because both drug and expectorant approaches are accompanied by a better reproductive outcome than surgical therapy - salpingectomy. According to results from this study, it can be seen that the open approach was represented only sporadically and laparoscopy and drug therapy were represented almost equally, depending on the clinical picture and the wishes of the patients.¹¹

Conclusion

The frequency of ectopic pregnancy was 1.27 % and the onset of ectopic pregnancy was not affected by age, parity, or previous IVF. The most common form of treatment was both laparoscopy and medical approach and open access occurs only sporadically, which fits into the recommendations. Early diagnosis of ectopic pregnancy is one of the major challenges for gynaecologists. The importance of early diagnosis lies in the fact that patients can be offered a conservative way

treatment, which can improve their reproductive future. It can be done preventively to influence risk factors in terms of adequate diagnosis and treatment of gynaecological inflammations and also in terms of preferring minimally invasive gynaecological operations, in order to reduce the probability of later occurrence of ectopic pregnancy. It is also important to educate sexually active young people about sexually transmitted diseases and their risks.

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None.

Conflict of interest

None.

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