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RESEARCH ARTICLE

FACTORS CONTRIBUTING TO THE INCREASE IN ECTOPIC PREGNANCY THROUGH A STUDY IN JIBLAH UNIVERSITY HOSPITAL FROM 2020 TO 2022

^{1,*}Dr. Afaf Al-Sharif, ²Dr. Wael Almaqtri, ³Angham Al-Gahm, ⁴Khulood Mustafa, ⁵Doaa Al-Mosanf, ⁶Doaa Al-Samet, ⁷Somia Saleh, ⁸Shams Al-Khawlan, ⁹Gadeer Al-Syari and ¹⁰Sokin Al-Shafq

¹Assistant Professor Gynecology and Obstetrics of Dean of Faculty of Midwifery, Jiblah-Ibb-Yemen

²Department of Chemistry, Faculty of medical lab, Jiblah University for Medical and Health Sciences

^{3,4,5,6,7,8,9,10} Bachelor's Degree in Midwifery

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ABSTRACT

Background: EP is a common complication and one of the causes of pregnancy -related deaths. Considering the increased prevalence of ectopic pregnancy in recent years and the increased risk factors such as assisted reproductive treatment, the present study was conducted to investigate the risk factors for ectopic pregnancy in a Jiblah University Hospital from 2020 to 2022. **Method:** A retrospective cohort research was among pregnant women attending Jiblah University Hospital, Ibb, Yemen through hospital records for the period 2020 to 2022 using a questionnaire form designed to collect data related to variables of research, which are housing, age, type of contraceptives, presence of pelvic diseases, presence of a previous pelvic operation, smoking, number of previous pregnancies, and first pregnancy. Data were entered using the Statistical Package for Social Science (SPSS) version 26 for analysis. A descriptive analysis was conducted to explore the data and present some variables. **Result:** Many factors influence the management option of tubal EP. In our study, we analyzed 198 cases, to evaluate factors contributing to the increase in ectopic pregnancy through a study in Jiblah University Hospital from 2020 to 2022. In the present study majority of ectopic pregnancies, occurred in the year 2021 (94%) comparison 60 (31%) 2020 and 40 (21%) 2022 the distribution of cases according to governorate 182 (94%) Ibb, 7 (4%) Al-Hodaydah, 3 (2%) Dhala and 2 (1%) Taiz and most of them had ectopic pregnancies, occurred in the females between age group 20-35 years (78%). There is a relationship between the use of contraception and smoking with the risk of ectopic pregnancy (This information was not mentioned in the patient's files). Found that there was a significant relationship between risk factors like pelvic surgery and the incidence of ectopic pregnancy. **Conclusion:** Since the incidence of ectopic pregnancy is likely to be considered an important role in future fertility, we designed this research to evaluate factors contributing to the increase in ectopic pregnancy through a study in Jiblah University Hospital from 2020 to 2022. Ectopic pregnancy is still a major challenge in obstetrical practice because of its bizarre clinical presentation and it is one of the commonest causes of pregnancy-related deaths in the first trimester. It can be diagnosed early by keeping a high index of suspicion. Despite exhaustive efforts to prevent ectopics, the numbers are constantly rising due to increased reporting of cases and improved diagnostic modalities.

*Corresponding author:

Dr. Afaf Al-Sharif

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INTRODUCTION

Ectopic pregnancy is potentially a life threatening condition. It is not an isolated occurrence in a woman's life.¹ The consequences are impaired fertility in later life. In an ectopic pregnancy, the developed embryo does not implant on the endometrial wall, but instead attaches to some other surface.

98% of pregnancies are within the fallopian tube.² Very rarely, the developed embryo will attach to another site, such as the cervix, ovary or to the abdominal wall.³ Rarely, in twin pregnancies, one embryo implants in the uterus and the other implants at an ectopic location. This rare event is called a heterotopic pregnancy and occurs more commonly in women undergoing assisted fertility treatments.

The current incidence of ectopic pregnancy is difficult to estimate accurately from available data (hospitalizations) because inpatient hospital treatment of ectopic pregnancy has decreased and multiple health care visits for a single ectopic pregnancy have increased.⁵ The Center for Disease Control published the data of incidence of ectopic pregnancy in the US.⁶ The prevalence of ectopic pregnancy among women who go to an emergency department with first trimester bleeding, pain, or both ranges from 6 to 16 %.⁷ The overall incidence of ectopic pregnancy increased during the mid twentieth century, plateauing at approximately almost 20 per 1000 pregnancies in the United States in the 1990s.⁸ Risk factors for ectopic pregnancy can be divided into those that confer high, moderate, or low risk. However, the characteristics that place a woman at risk for ectopic pregnancy are not completely independent of one another.⁹

MATERIALS AND METHODS

Research planning: Initially, the hypothesis and methodology were designed, literature about ectopic pregnancy was reviewed, and permissions were collected. The study focused to evaluate factors contributing to the increase in ectopic pregnancy through a study in Jiblah University Hospital from 2020 to 2022. Data were collected and statistically analyzed, to perform the results and conclusion. And finally, the research was written.

Objective of research: Factors contributing to the increase in ectopic pregnancy through a study in Jiblah University Hospital from 2020 to 2022.

Research methods: This research was retrospective cohort research.

Research setting and duration: Jiblah University Hospital, Ibb, Yemen through hospital records for the period 2020 to 2022.

Research population: Retrospective cohort research was among pregnant women attending Jiblah University Hospital, Ibb, Yemen through hospital records for the period 2020 to 2022.

Research tool: A search tool is a questionnaire form designed to collect data related to variables of research, which are housing, age, type of contraceptives, presence of pelvic diseases, presence of a previous pelvic operation, smoking, number of previous pregnancies, and first pregnancy.

Data processing and analysis: Collected data were rechecked for completeness, and consistency and coded before data entry. Data were entered using the Statistical Package for Social Science (SPSS) version 26 for analysis. A descriptive analysis was conducted to explore the data and present some variables.

Eligibility criteria

Inclusion criteria for cases: All women's files containing all research variables were accepted (housing, age, type of contraceptives, presence of pelvic diseases, presence of a

previous pelvic operation, smoking, number of previous pregnancies, and first pregnancy).

Exclusion criteria for both cases and controls: All women's files that did not contain all research variables were for exclusion (housing, age, type of contraceptives, presence of pelvic diseases, presence of a previous pelvic operation, smoking, number of previous pregnancies, and first pregnancy).

RESULTS

This study was designed to evaluate factors contributing to the increase in ectopic pregnancy through a study in Jiblah University Hospital from 2020 to 2022.

DISCUSSION

EP is a common problem among women of reproductive age. According to the literature, many factors influence the management option of tubal EP. In our study, we analyzed 198 cases, to evaluate factors contributing to the increase of ectopic pregnancy through a study in Jiblah University Hospital from 2020 to 2022, the demographic characteristics and variants of research to cases in are Table 1. EP is a life-threatening emergency in obstetrics. It remains an important contributor to maternal morbidity and mortality. The prevalence of ectopic pregnancy among women who go to an emergency department with first-trimester bleeding, pain, or both, varies from 6 to 16%. Globally its incidence has been on the rise over the past decades, complicating 0.25-2.0% of all pregnancies worldwide (Mehta *et al.*, 2017). In the present study majority of ectopic pregnancies, occurred in the year 2021 there were 94 (48%) comparison to 60 (31%) in 2020 and 40 (21%) in 2022, and the distribution of cases according to governorate 182 (94%) Ibb, 7 (4%) Al-Hodaydah, 3 (2%) Dhala and 2 (1%) Taiz and most were of ectopic pregnancies, occurred in the females between age group 20-35 years (78%) Studies in the USA, reported an increased incidence of ectopic pregnancy with advancing age. The difference observed in our country might be because women here enter into marriage life earlier and end reproduction earlier too. Bouyer *et al.*, (2003) in a large case-control study in France also reported a significant relationship between age and ectopic pregnancy. The role of age in the incidence of ectopic pregnancy has been suggested by researchers. However, studies have produced conflicting results in this respect. Thus, the precise physiological impact of advanced maternal age on ectopic pregnancy risk is unclear. A case-control study by Parashiet *et al.*, (2014) demonstrated that the risk of ectopic pregnancy increases in women over 30 years of age, and a case-control study by Karaer *et al.*, (2006) they have found that an increase in the rate of ectopic pregnancy coincides with an increase in the age of women before reaching the age of 40 years.

In this study, we did not find that there is a relationship between the use of contraception and with risk of ectopic pregnancy (This information was not mentioned in the patient's files). These observations are different from those previously reported by Parashiet *et al.*, (2014). We found that there was a significant relationship between risk factors like pelvic surgery and the incidence of ectopic pregnancy, this is consistent with a study by Karaer *et al.*, (2006).

Table 1. Distribution of cases according to variants of research (N: 198)

Variants		Having an ectopic pregnancy (N, %)
Year	2020	60 (31%)
	2021	94 (48%)
	2022	40 (21%)
Governorate	Ibb	182 (94%)
	Al-Hudaydah	7 (4%)
	Dhala	3 (2%)
	Taiz	2 (1%)
Age	<20	14 (7%)
	20-35	151 (78%)
	>35	29 (15%)
Use of contraceptives	Micro pills	1 (1%)
	IUD	2 (1%)
	Other	7 (4%)
	Nothing	184 (95%)
Sexual infection	No	194 (100%)
	Yes	0 (0%)
Infertility	No	194 (100%)
	Yes	0 (0%)
Pelvic disease	No	189 (97%)
	Yes	5 (3%)
Having a previous pelvic operation	No	175 (90%)
	Yes	19 (10%)
Type of previous pelvic operation	Cyst excision	1 (5%)
	Chronic pelvic	1 (5%)
	CLS	7 (37%)
	D and C	9 (47%)
	Laparotomy and appending	1 (5%)
Previous pregnancies an ectopic pregnancy	Yes	3 (2%)
	No	191 (98%)
Previous pregnancies	<4	78 (40%)
	4-6	87 (45%)
	>6	29 (15%)
First pregnancy	Yes	34 (18%)
	No	160 (82%)
Smoking	Yes	2 (1%)
	No	192 (99%)

The observed association between pelvic surgery and ectopic pregnancy may be explained by peritoneal and peritubular adhesions that often occur with this type of surgery. In our study, there is no relationship between smoking and ectopic pregnancy, unlike many previous studies, several studies have found an association between cigarette smoking and EP (Moini *et al.*, 2014; Bouyer *et al.*, 2003). Although the pathophysiology of smoking related to EP remains unclear, inhalation of cigarette smoking has shown an effect on the function of cilia and smooth muscles of the fallopian tube presented by animal models (Shaw *et al.*, 2010). Ectopic pregnancies are generally diagnosed earlier due to their association with symptoms like bleeding and pain. In the absence of amenorrhoea, a woman may be unaware of an ongoing pregnancy and hence may not anticipate a pregnancy-associated complication. This subjects her to increased risk due to delayed diagnosis. A detailed history taking is imperative in all cases of ectopic gestation so that underlying causative etiology is established. Ectopic pregnancy should be suspected in every woman of reproductive age who presents with unexplained abdominal pain, irrespective of amenorrhoea and vaginal bleeding and whether risk factors are present or not (Mehta *et al.*, 2017).

CONCLUSION

Since the incidence of ectopic pregnancy is likely to be considered an important role for future fertility, we designed this research to evaluate factors contributing to the increase in ectopic pregnancy through a study in Jiblah University Hospital from 2020 to 2022.

Ectopic pregnancy is still a major challenge in obstetrical practice because of its bizarre clinical presentation and is one of the commonest causes of pregnancy-related deaths in the first trimester. It can be diagnosed early by keeping a high index of suspicion. Despite exhaustive efforts to prevent ectopics, the numbers are constantly rising due to increased reporting of cases and improved diagnostic modalities. A delay in referral causes significant morbidity and diminishes the chances of preserving future fertility. In developing countries, a majority of hospital-based studies have reported an ectopic pregnancy case fatality rate of around 1-3%, 10 times higher than those reported in developed countries. It is the most important cause of maternal mortality and morbidity in the first trimester. Proper evaluation of pregnancy with associated risk factors and early diagnosis will help preserve the tube and in turn her fertility and thus help in decreasing morbidity and mortality. We also recommend improving the data management of hospitals, as there is a significant shortage of patient data in hospital files. The health care providers should document patients' information clearly on their cards. A large-scale study with primary data of adequate sample size is required to assess the full picture of EP.

RECOMMENDED

Conclusion and Recommendation In the light of the results reached in our study represented in factors contributing to the increase in ectopic pregnancy through a study in Jiblah University Hospital from 2020 to 2022, We were able to make a set of the following recommendations:

- We recommend improving the data management of hospitals. The health care providers should document patients' information clearly on their cards. A large-scale study with primary data of adequate sample size is required to assess the full picture of EP.
- We recommend that women should undergo health care during pregnancy.
- Additional studies are needed to be performed on hormonal and immunologic factors possibly involved in EP.

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