ORIGINAL ARTICLE

RELATION OF AGE, PARITY AND DURATION OF SUBFERTILITY AS RISK FACTORS FOR ECTOPIC PREGNANCY

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ABSTRACT

Background: Ectopic pregnancy is one of the leading causes of maternal death especially in developing countries. Several risk factors for ectopic pregnancy have been identified. The objective of this study was to determine the association of age, parity, and duration of subfertility as risk factors for ectopic pregnancy.

Material & Methods: This descriptive study was conducted in Gynae C Unit, Lady Reading Hospital, Peshawar, Pakistan over a period of three years from 1st January 2009 to 31st December 2011, including 150 cases of ectopic pregnancy. After taking detailed history, the association of age, parity, and duration of subfertility as risk factors was assessed. Chi-square test was applied to test the statistical significance.

Results: Ectopic pregnancy occurred commonly in patients aged 26-35 years 64(42.6%), while 49(32.6%) patients were 15-25 years and 37(24.6%) >35 years. The condition was most frequently seen in multipara 71(47.3%) as compared to primipara 52(34.66%), and grand multipara 27(18.8%). Subfertility of 2-5 years was found in 56(37.3%) patients, 6-10 years in 72(48%), and 11-15 years in 22(14.6%).

Conclusion: Age, parity, and duration of subfertility are the contributing risk factors leading to ectopic pregnancy, especially the age group 26-35 years, multiparity and subfertility duration of 6-10 years.

KEY WORDS: Ectopic Pregnancy; Risk Factors; Parity; Subfertility.

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INTRODUCTION

An ectopic pregnancy is a complication of pregnancy in which the embryo implants outside the uterine cavity.[1] Its incidence is 0.5-1.5% of all pregnancies. Although its incidence is reduced, when compared with previous decades, but it is still one of the leading causes of maternal death especially in developing countries. The commonest site is fallopian tube (97%), but implantation can also occur in ovaries, cervix, abdominal cavity, uterine cornue and previous caesarean scars. Bleeding from these abnormal sites lead to catastrophic hemorrhage, and life-threating emergency which may lead to maternal death.[2] Ectopic pregnancy most likely occurs within the first few weeks of pregnancy. It can easily be diagnosed on presenting symptoms, examination and investigations. But still one third of patients die without seeking any gynecological or medical treatment due to a variety of clinical presentations. Despite the notable successes in diagnostic and detection techniques, ectopic pregnancy is still a source of serious maternal mortality and morbidity worldwide.[3]

Several risk factors for ectopic pregnancy has been identified including a history of pelvic inflammatory disease (PID), previous history of miscarriages, age, parity, infertility, smoking at the time of conception, previous ectopic pregnancy, previous pelvic surgery, induction of ovulation and intrauterine device usage.[4] It is necessary to high light the risk factors for proper management of patients.

The objective of this study was to determine the association of age, parity and duration of subfertility as risk factors for ectopic pregnancy.

MATERIAL AND METHODS

It was a descriptive study conducted at Gynae C Unit, Lady Reading Hospital, Peshawar, Pakistan from 1st January 2009 to 31st December 2011. It included 150 patients of ruptured and un-ruptured

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ectopic pregnancies presenting to labor room, emergency or outpatient department. Patients with intrauterine pregnancy or miscarriage, history of previous ectopic pregnancy, pelvic inflammatory disease, previous miscarriages, infertility treatment, current use of intrauterine contraceptive device, history of previous tubal surgery i.e. tubal ligation, sterilization reversal, ovulation induction, or IVF procedure were excluded. After taking detailed history, the association of age, parity, and duration of subfertility as risk factors was assessed. Age was grouped into 15-25, 26-35, and >35 years. Parity into primipara, multipara and grand multipara. Duration of subfertility as 2-5, 6-10 and 11-15 years. Chi-square test was applied to test the statistical significance.

RESULTS

Among 150 cases, the risk of ectopic pregnancy was maximum in age group 26-35. Ectopic pregnancy was observed to be 49 (32.6%) in age group 15-25 years, 64 (42.6% in age group 26-35, and 37 (24.6%) in age group >35 years. (Table 1)

In regard to parity; ectopic pregnancy was most frequently seen in multipara. Ectopic pregnancy was observed to be 52 (34.66%) in primipara, 71 (47.30%) in multipara, and 27 (18.80%) in grand multipara. (Table 2)

In regard to subfertility, ectopic pregnancy was most frequently seen in subfertility of 2-5 years. Ectopic pregnancy was observed to be 56 (37.3%) in patients with subfertility duration of 2-5 years, 72 (48%) in 6-10 years and 22 (14.6%) in 11-15 years. (Table 3)

DISCUSSION

Ectopic pregnancy is the leading cause of pregnancy related deaths in the first trimester.[5] It results in significant morbidity for the mother and inevitable loss of the pregnancy. In our population the rate of ectopic pregnancy is constantly increasing because of poverty, delay in diagnosis, poor referral system, quackery, poor health awareness and coordination between health care providers leading to delay in diagnosis. Apart from fetal wastage, maternal mortality and morbidity, ectopic pregnancy is also associated with repeat ectopic gestation and impairment of subsequent fertility.[6]

Table 1: Relation of age with ectopic pregnancy (n=150).

Age Group	Number of patients	Percentage
15-25 years	49	32.6%
26-35 years	64	42.6%
>35 years	37	24.6%

Table 2: Relation of parity & ectopic pregnancy (n=150).

Parity	Number of patients	Percentage
Primipara	52	34.6%
Multipara	71	47.3%
Grand multipara	27	18.8%

Table 3: Relation of duration of subfertility and ectopic pregnancy (n=150).

Duration of subfertility	Number of patients	Percentage
2-5 years	56	37.3%
6-10 years	72	48%
11-15 years	22	14.6%

In our study, the peak age of incidence was 26-30 years which is consistent with the findings by Kumar et al[7], Igbarese et al.[8] Ectopic pregnancy was observed to be 32.6% in age group 15-25 years, 42.6% in age group 26-35, and 24.6% in age group >35 years in our study. Age has long been suspected to play a role in ectopic pregnancy risk and other pregnancy related complications. Bouyer-study[10] showed that age plays an important role and increases the probability of exposure to other risk factors. Aging may result in progressive loss of myoelectrical activity along the fallopian tubes. Age related changes in tubal function and tubal diverticula which increases with age, predispose patients to ectopic pregnancy.[11,12]

Similarly there is also a relationship between parity as a risk factor for ectopic pregnancy. In our study the risk was most frequently seen in multipara (47.3%) as compared to primipara (34.66%) and grand multipara (18.8%). A study conducted at Department of the General Hospital "George Gennimatas" in Athens, Greece proved statistically significant positive association between ectopic pregnancy rupture and parity[13]. Manjhi et al[9]. Showed increased risk of ectopic pregnancy in primigravida which conflicts with the results of our study.

We found that the risk of ectopic pregnancy increased with the duration of subfertility and this relation persisted if the analysis was restricted to women whose pregnancy was not induced. It is therefore likely that a history of subfertility per se (independently of infertility drug use) is associated with ectopic pregnancy risk. However, as ectopic pregnancy is known to be a risk factor for subsequent infertility,[14-16] the link between ectopic pregnancy and infertility, which seem to be mutual risk factors, is likely to be complex. In our study subfertility was con-

sidered as one of the important factors and found that (37.3%) patients had infertility between 2 to 5 years duration, (48%) between 6 to 10 years and (14.6%) between 11 to 15 years. A study was conducted at five hospitals in Seattle, WA between 1975 and 1979 on 149 patients having tubal pregnancy and 706 control women having an intrauterine pregnancy during the same time period. A higher proportion of cases reported a history of infertility (attempt to conceive without success for a period of at least 1 year) than controls (relative risk [RR] = 2.5; 95% confidence interval [CI] = 1.7-3.7). The average time to conceive was 15.4 months as compared to controls which was 6.9 months. These results suggest that a history of subfertility predisposes women to an increased risk of tubal pregnancy.[17]

CONCLUSION

Age, parity, and duration of subfertility are the contributing risk factors leading to ectopic pregnancy, especially the age group 26-35 years, multiparity and subfertility duration of 6-10 years.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
GRANT SUPPORT AND FINANCIAL DISCLOSURE
None declared.