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A Cross-Sectional Study on Various Risk Factors Associated With Ectopic Pregnancy

Medical Science

KEYWORDS : Ectopic pregnancy, Risk factors, Maternal morbidity.

***Thamilkothai R** — Senior Assistant professor, Department of Obstetrics and Gynaecology, Tirunelveli Medical College, Tirunelveli - 627 011, Tamil Nadu, India. * Corresponding author

Dr.Gomathi M — Postgraduate, Department of Obstetrics and Gynaecology, Tirunelveli Medical College, Tirunelveli - 627 011, Tamil Nadu, India.

ABSTRACT

In developing countries, ectopic pregnancy remains an important cause of first trimester maternal morbidity and mortality. Studies have highlighted that the awareness of risk factors associated with ectopic gestation helps in identifying the cases early. Main risk factor is the prior tubal damage due to any cause. Chlamydial infection was found to be the risk factor for 30 - 50% of all ectopic gestation. Since, ectopic pregnancy is an important health problem among the reproductive age group women, the study was aimed to determine the clinical profile of the patients as well as the risk factors so as to make recommendations in order to reduce the incidence of this life threatening event. The study was carried out in ectopic pregnancy cases who attended Obstetrics and Gynecology department for a period of two years from July 2012 to June 2014.Face to face interviews were conducted using data collection tool. All data were collected on a structural data form and analyzed. A total of 138 patients were recruited, of which 124 patients who underwent laparotomy were found to be having ectopic pregnancy. Previous LSCS was the most common risk factor followed by previous tubal surgeries, abortions and pelvic inflammatory disease. Early diagnosis of ectopic pregnancy helps to reduce the incidence of rupture. So, the physician can provide conservative medical and surgical treatments.

Introduction

Ectopic pregnancy is a significant problem for reproductive age women and their health care providers [1, 2]. An ectopic pregnancy results from disruption in the tubal transport process and ectopic pregnancy complicates 2% of all pregnancies in western countries[3].Age has a role in the occurrence of ectopic pregnancy & other pregnancy complications. A study conducted by Bouyer et al proved that age has an important role and increases the exposure to other risk factors[4]. The progressive loss of myoelectrical activity along the fallopian tube occurs due to aging. Age related changes in the tubal function and tubal diverticula predispose the older age group patients to develop ectopic pregnancy [5, 6]. In India, many studies have shown that the peak age of ectopic pregnancy incidence was between 20 - 30 years. (Samiya mufti et al, Majhi AK et al) [7, 8]. In India early marriage is common and most of the women finish their family before the age of 30 years. And also 20 – 30 years is the most fertile period with infrequent usage of contraception.

There is also a relationship between the parity and the ectopic pregnancy risk. A study conducted in the department of general hospital 'George Gennimatas' in Athense, Greece showed the statistically significant positive association between parity and ectopic pregnancy rupture [9]. Previous caesarean section and other pelvic surgery A recent Danish register based study found a moderately increased risk of ectopic gestation in women who have undergone emergency and elective caesarean sections [10]. A meta analysis by O'neil et al showed 5% increased odds of ectopic pregnancy among the studies included, but the estimate did not reach the statistical significance [11]. A case controlled study by michalas et al found that all types of pelvic surgeries increase the risk of ectopic gestation from a 2 fold increase for appendicectomy to a 9 fold increase for ectopic pregnancy [12]. Tubal recanalisation surgery In a large series study from various hospitals, the risk of ectopic pregnancy after sterilization reversal was reported to be 0.3 to 3% of all pregnancies [13]. Microsurgical techniques for reversal of sterilisation provide better results than conventional surgery[14]

PID is defined as the infection of endometrium, fallopian tubes and contiguous structures by the ascent of micro organisms from the lower genito urinary tract [15]. It is most commonly associated with sexually transmitted infections, especially *Chlamydia trachomatis* & *Neisseria gonorrhea.* With the development of repeated PID, the risk of ectopic pregnancy and sub fertility is increased. Approximately 70% of Chlamydial infections are asymptomatic. A small proportion may present with Vaginal discharge, dysuria, lower abdominal pain, arthritis or post coital bleeding. The significance of infectious diseases in ectopic pregnancy is well documented [16-19].

Many studies have reported that smoking is a major risk factor for the occurrence of ectopic pregnancy.12A prior history of ectopic pregnancy is a possible indicator of the pre existing tubal damage and hence a strong risk factor for recurrence [20]. This is because tubal pathology is always bilateral and there is a strong tendency for ectopic gestation to occur first on one side and then on the other side later [21]. The patients with recurrent ectopic pregnancies are more likely to experience a tubal rupture [22]. A study reported that women with history of an ectopic pregnancy had 13 times higher the chance for the second ectopic compared to women who had a first live birth [23]. Intrauterine contraceptive device use Although IUCD users are supposed to be protected from both intrauterine and extra uterine pregnancy, it was found that a woman who conceives with IUCD in place is seven times more likely to have an ectopic pregnancy in comparison to a woman who conceives without IUCD [24]. Ectopic pregnancy is known to occur frequently in women who use certain types of IUCDs [25].

Since, ectopic pregnancy is an important health problem among the reproductive age group women, the study was aimed to determine the clinical profile of the patients as well as the risk factors so as to make recommendations in order to reduce the incidence of this life threatening event

Materials and Methods

The cross-sectional study was conducted at Tirunelveli medical college hospital among topic pregnancy cases who attended Obstetrics and Gynecology at Tirunelveli Medical College Hospital from July 2012 to June 2014 for a period of 2 years.

Data Collection

Data collection tool was used to collect the different information. Face to face interviews were conducted using data collection tool by the investigator including detailed history taking and relevant physical examination. A detailed history was taken from the patient (if the patient was in shock the history was taken retrospectively). After taking history physical examination was done especially for vital signs, abdominal examination, per

vaginal examination, cervical excitation test and culdocentesis when needed. The basic investigations were done in all patients. All data were collected on a structural data form (sample enclosed)and analyzed for descriptive statistics.

Results

A total of 138 patients were recruited in the study. The study population was estimated to be 0.94% of total deliveries (14,688) and0.73% of total admissions (18,939) in gynecology ward during the study period. 5 patients in the study had undergone medical management. Remaining 133 patients had undergone laparotomy. During laparotomy124 patients were found to be having ectopic pregnancy which was confirmed by histopathology. One patient had heterotopic pregnancy. One patient had negative laparotomy. Remaining 7 patients had other gynecological lesions.

63.8% of the study population belongs to 21 to 30 years of age. 49 (35.55%) patients were more than 30 years of age.**(Figure-1)** Among the study population 74.5% were multigravida and 24.6% were primigravida.(**Figure-2)**Among the parous women with at least one live child 25(18.1%) were sterilized and 66 (47.8%) were not sterilized. The duration between sterilization and the occurrence of ectopic pregnancy was 1-3 yrs in 7 (28%) patients, 4 to 10 yrs in 16(64%) patients ,> 10 yrs in 2(8%) patients. Among the sterilized women 11(44%) patients had concurrent sterilization, 4 (16%) patients had laparoscopic sterilization,6 (24%) patients had puerperal sterilization and4(16%) patients had total abdominal tubectomy.(**Figure-3)**

Discussion

In the present study, the incidence of ectopic pregnancy was 8.7per 1000 deliveries. In a study conducted by shraddhashetty k et. al in Mangalore , the incidence was 5.6/1000 deliveries[6] . In a study conducted by Rashmi et.al the incidence was 1: 399 pregnancies. In a study conducted by porwal sanjay et al , the incidence was found to be 2.46 per1000 deliveries .Majority of the patients(63.8%) were in the age group of 21 to 30years in the current study. Similar results were found in Smita singh et.al and Samiya Mufti et.al studies[5] . This corresponds to the age of peak sexual activity and reproduction. There are studies stating that age related tubal changes increase the incidence of ectopic pregnancy [5] .

In this study multigravida (75.4%) were found to be more prone to have an ectopic pregnancy. This result was similar to other studies conducted by Shraddha Shetty et.al and Laxmikarki et al[6] . In Laxmikarki study 61% were multiparous women.

The commonest risk factors among the study population, 31.8% had previous LSCS. Second most common causes include, history of previous sterilization and previous abortion having the same incidence of 18.1%. The third common risk factor was previous pelvic inflammatory disease in 13.7% of patients. Similar risk factors were noted in various other studies[6] . The increasing trend in caesarean section was found to be associated with increased risk of ectopic pregnancy.6 patients had H/O MTP pills intake. The significance of this risk factor needs further studies . 7 patients gave history of ovulation induction. Advancement in infertility treatment was associated with significant risk of ectopic pregnancy.

The commonest risk factors in shraddha Shetty et al were history of abortion (29 %), 12.9% had a history of previous LSCS, history of tubal surgery (9.6%), infertility (3.2%) and pelvic inflammatory diseases (3.2%) previous history of tubectomy (3.2%), 3.2% had a history of infertility. Copper-T was inserted in 6.4% cases. 12.9% , 9.7% gave a history of taking MTP pills. A history of previous ectopic in (3.2%) and history of PID was found in 3.2% of the cases.

Conclusion

In the present study, age group of 21 to 30 years found in majority of women, which corresponds to the age of peak sexual activity and reproduction. In the present study multigravida (75.4%) were found to be more prone to have an ectopic pregnancy. The commonest risk factors among the study population were previous LSCS, tubal surgeries , previous ectopic pregnancies , prior H/O abortions , H/O infertility and pelvic inflammatory disease. Routine first trimester ultrasound should be done in all pregnant women at the booking visit itself . Early diagnosis and referral is the key factor in reducing the maternal morbidity and in preserving the future fertility. Because of the high incidence of tubal rupture in our set up, community education is required to inform the women to attend the health facilities as early as possible once they have symptoms.

Figure-1- Age Distribution (in years)

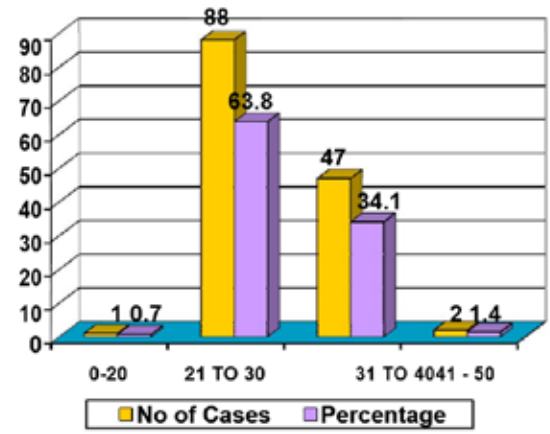

Figure-2- Obstetric Code

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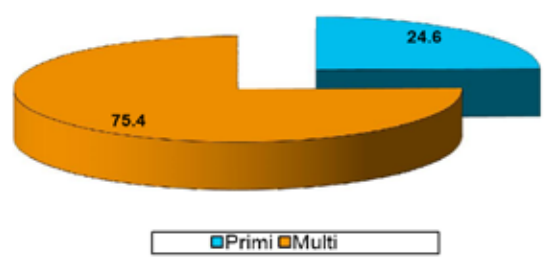
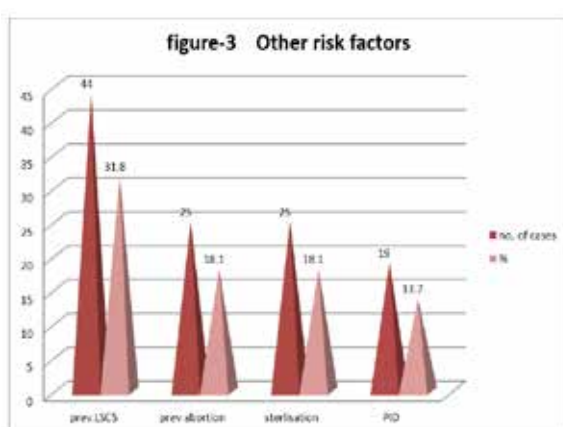


Figure-3- Risk factors



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