

**ORIGINAL ARTICLE:****Profile study of ectopic pregnancy at Department of Obstetrics and Gynecology, Dr. Soetomo Hospital, Surabaya, Indonesia****Andarisa Rachman Nugraha,<sup>1</sup> Ashon Sa'adi,<sup>1\*</sup> Ni Wajan Tirthaningsih<sup>2</sup>**<sup>1</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Airlangga, Dr Soetomo Hospital, Surabaya, Indonesia. <sup>2</sup>Department of Anatomy and Histology, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia.**ABSTRACT**

**Objective:** Ectopic pregnancy is a leading cause of maternal death during the first trimester of pregnancy, it can cause infertility and even death as a result of massive bleeding of the mother. Based on those fact, study of ectopic pregnancy is needed.

**Materials and Methods:** This study used retrospective design and total sampling to collect the data and present it as a descriptive – analytical result.

**Results:** Of the 98 samples, as many as 30.6% of the patients age was in the range of 26 - 30 years, there was 16.3% of patients with unmarried status, hormonal contraception was more often used by patients than intrauterine device, there were 7% of patients with recurrent ectopic pregnancy, as many as 12.1% of patients had a history of surgery in the abdomen or pelvic area, ectopic pregnancy was most common in first pregnancies, and there were 26.4% of patient found with Infection.

**Conclusion:** Ectopic pregnancy has many risk factors, Ectopic pregnancy could be cause by solely one risk factor or more (multifactorial), The most commonly found risk factor was infection.

**Keywords:** Ectopic, Pregnancy, Dr. Soetomo Hospital, EP

**ABSTRAK**

**Tujuan:** Kehamilan ektopik merupakan penyebab utama kematian ibu selama trimester awal kehamilan, kehamilan ektopik dapat menyebabkan infertilitas bahkan kematian akibat perdarahan massif dari sang ibu. Berdasarkan fakta tersebut, diperlukan kajian mengenai kehamilan ektopik

**Bahan dan Metode:** Penelitian ini menggunakan desain retrospektif dan menggunakan total sampling dalam mengumpulkan data lalu disajikan dalam bentuk deskriptif - analitik

**Hasil:** Dari 98 sampel, sebanyak 30,6% dari pasien berusia rentang 26 -30 tahun, sebanyak 16,3% pasien belum menikah, kontrasepsi hormonal lebih sering ditemukan dibanding AKDR, sebanyak 7% pasien mengalami kehamilan ektopik berulang, sebanyak 12,1% pasien memiliki riwayat operasi di daerah abdomen ataupun pelvis, kehamilan ektopik paling sering ditemukan pada kehamilan pertama, terdapat 26,4% pasien dengan infeksi.

**Simpulan:** Kehamilan ektopik memiliki banyak faktor risiko, Kehamilan ektopik dapat disebabkan hanya dari satu faktor risiko ataupun lebih (multifaktorial), Faktor risiko yang paling sering ditemukan adalah infeksi.

**Kata kunci:** Ektopik, Kehamilan, RSUD Dr. Soetomo, KE

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## INTRODUCTION

Ectopic pregnancy is the most common cause of maternal death in the first trimester pregnancy, ectopic pregnancy occurs when fertilized egg was not implanted in endometrium wall.<sup>1</sup> Ectopic pregnancy is accounted for 2% of all pregnancy case in the world.<sup>2</sup> Ectopic pregnancy can cause infertility even death as a result of massive bleeding of the mother, 9% of all maternal death in the world was caused by ectopic pregnancy.<sup>3</sup> In 19th Century, ectopic pregnancy was a fatal case.<sup>4</sup> Early intervention and live saving procedure are widely done for ectopic pregnancy case nowadays, but ectopic pregnancy case incident was still accounted from 4% until 10% from all of the maternal death.<sup>5</sup> According to WHO, ectopic pregnancy case in Indonesia is not too different than in USA, There were approximately 60.000 cases each year or 0.03% from total population.<sup>6</sup>

Ectopic pregnancy location is most commonly found in fallopian tube with 95% cases, from 95% of ectopic pregnancy, which happened in the fallopian tube, 80% of it happened in ampulla.<sup>3</sup> Most of ectopic pregnancy case was caused by disruption/damage on the fallopian tube, this disruption could be caused by history of surgery in abdomen/pelvic and pelvic infection.<sup>7</sup> Parashi and Bansal said that infection and history of surgery are the main cause of ectopic pregnancy. Pelvic inflammatory disease caused by chlamydia, tuberculosis, and gonorrhoeae are also causes of ectopic pregnancy because they could cause inflammation and scar formation which can disrupt fallopian tube.<sup>8,9</sup>

Other risk factor that can cause ectopic pregnancy are history of previous ectopic pregnancy, smoking, contraception, infertility, multiple sex partner, and age.<sup>2</sup> Another study done by I tay, Moore, and Walker<sup>10</sup> said that history of previous ectopic pregnancy, damaged fallopian tube, infertility, assisted reproductive technology, increasing age, and smoking are the risk factor of ectopic pregnancy.<sup>10</sup> Due to the danger of ectopic pregnancy, further learning is needed to prevent, diagnose, and even treat ectopic pregnancy case.

## MATERIALS AND METHODS

This research used retrospective study which used secondary data collected from the medical records. Instruments used in this research were medical records of ectopic pregnancy patients in Department of Obstetrics and Gynecology of Dr. Soetomo General Hospital from early 2013- late 2014. All of the ectopic pregnancy patient starting from January 1st 2013 until December 31st 2014 were included and the exclusion

criteria was if the medical record's data was not complete. There were 98 samples in this study.

## RESULTS AND DISCUSSION

Table 1. Age Distribution

Age	Total	Percentage (%)
<20	4	4
20 -25	16	16.3
26 -30	30	30.6
31 -35	26	26.5
> 35	22	22.4
	98	

Table 2. Marital Status

Status	Total	Percentage (%)
Married	81	82.6
Not Married	17	17.3
	98	

Table 1 indicates highest distribution belongs to age group 26-30 years old and the lowest distribution belongs to age group <20 years old. Table 2 indicates almost 20% (17.3%) of the patients have unmarried status.

Table 3. Contraceptive Use

EP History	Total	Percentage (%)
Previous EP	7	7.1
Previous EP >1	0	0
Never EP	91	92.8
	98	

Table 4. Previous Ectopic Pregnancy

Contraception	Total	Percentage (%)
Inject and Oral (Hormonal)	7	7.1
IUD	2	2
No Contraception ever used	89	90.8
	98	

Table 5. Surgical History

Surgical Procedure	Total	Percentage (%)
<i>Salphyngectomy and Tubectomy</i>	8	8.1
<i>Sectio Caesarea</i>	3	3
Curettage	1	1
No Surgical History	86	87.7
	98	

Table 3 shows there are more use of hormonal contraception than intra uterine device in ectopic pregnancy patients. Table 4 shows there are 7.1% of patients had recurrent ectopic pregnancy. Table 5 indicates 12.1% of the patients had surgical procedure

applied. Table 6 Indicates 26.4% of patients had infection. Table 7 indicates that 1st pregnancy was most common found in ectopic pregnancy patients.

Table 6. Pelvic infection

Infection	Total	%
Adhesion without surgical history	13	13.2
Vaginal Discharge	10	10.2
Appendicitis	3	3
No Infection	72	73.4
	98	

Table 7. Pregnancy history

Pregnancy History	Total	Percentage (%)
1 <sup>st</sup> Pregnancy	32	32.6
2 <sup>nd</sup> Pregnancy	29	29.5
3 <sup>rd</sup> Pregnancy	20	20.4
4 <sup>th</sup> Pregnancy	11	11.2
Pregnancy >4x	6	6.1
	98	

From 98 medical records of ectopic pregnancy patients, the majority of patients age were group of 26-30 years (30.6%), followed by age group of 31-35 years as much as 26.5% of patients, older than 35 years as much as 22.4% of patients, age group of 20-25 years were 16.3% of patients, and the least is under 20 years old as much as 4% of the patients. This data shows similarity with previous research by Suryawan<sup>6</sup> and Bansal that shows most of their samples age were group of 20-35 years.<sup>6,9</sup> Also shows similarity with previous research in Surabaya by Santoso which showed most of his samples age are group of 26-30 years.<sup>11</sup> The relatively high score for group of younger than 20 years and older than 35 years (26.5%) also had part in ectopic pregnancy incident. Teenage pregnancy (less than 20 years old) and pregnancy at old age (more than 35 years old) have more risk than other pregnancy.<sup>12</sup> At old age, ectopic pregnancy was estimated to be caused by change of hormonal activity which leads to disruption of cilia motility in fallopian tube. At teenage pregnancy, ectopic pregnancy could be caused by immature reproductive organ or infection caused by multiple sex partner. In teenage pregnancy with amenorrhea, pain, and bleeding should be evaluated for possibility of ectopic pregnancy.

According to the data, there are 173% of patients with not married status. This result shows similarity with research in Guinea by Thonneau which said 16.8% of his patients had not married status.<sup>13</sup> This not married status could relate to having multiple sex partner which in turn increase the potential of sexually transmitted disease to spread widely. Sexually transmitted disease could cause the narrowing of the tubal passage and lead to ectopic pregnancy.<sup>14</sup> Multiple sex partner is one of ectopic pregnancy risk.<sup>15</sup>

Most of the contraception used by ectopic pregnancy patients were hormonal contraception (9.1%) and most of it were injected hormonal contraception (6 patients) and 1 patient altered from injected to hormonal contraception. There were 2 patients with intra uterine device implanted. This study shows similarity with Suryawan, that hormonal contraception is more commonly found in ectopic pregnancy patients than IUD.<sup>6</sup> Hormonal contraception can cause disruption of cilia motility in fallopian tube which lead to ectopic pregnancy.<sup>2</sup> Meanwhile IUD can lead to inflammation and narrowing of the tubal passage which lead to ectopic pregnancy.<sup>16</sup> This results did not show that contraceptive use are causing ectopic pregnancy, but in some cases if there is a failure in contraceptive function, then ectopic pregnancy can happen.

There were 71% of patients with recurrent ectopic pregnancy and no patient found with history of recurrent ectopic pregnancy more than 1 time. That was because the probability of getting pregnant is so small in woman which had salphyngectomy procedure in both of her fallopian tubes. This result shows similarity to a research in India done by Bansal that 5.44% of their samples had recurrent ectopic pregnancy.<sup>9</sup> Patients with history of previous ectopic pregnancy have more risk to have ectopic pregnancy in the next pregnancy.<sup>2,10</sup>

From 98 ectopic pregnancy patients, 12.2% of them had surgical history. Specifically, 6 patients with salphyngectomy procedure history, 1 patient with tubectomy procedure history, 3 patients with sectio caesarea procedure history, and 1 patient with curettage procedure history. The most common risk factor found in ectopic pregnancy patients was disruption of the fallopian tube, this hindrance could be caused by surgical history or pelvic infection.<sup>7</sup> Implantation at scar formation of previous caesarean procedure could happen, late diagnosis and therapy could lead to the rupture of the uterus, hysterectomy, even maternal death.<sup>17</sup>

There were 26.2% of patients with infection, specifically there were 13.2% patients with adhesion with no surgical history, 10.2% patients with vaginal discharge, and 3% patients with appendicitis. Infection was the variable found the most in this research. It shows similarity with the research of Suryawan<sup>6</sup> that said PID was most commonly found variable in his research, that situation was also found in India by Bansal.<sup>6,9</sup> Most common risk factor found in ectopic pregnancy patients was disruption of the fallopian tube, this hindrance could be caused by surgical history or pelvic infection, that infection is included in ectopic pregnancy risk factor.<sup>2,7,10</sup> Vaginal Infection was the most common single factor found in ectopic pregnancy patient.<sup>15</sup>

There were 32.6% patients were in their 1st pregnancy, 29.5% patients were in their 2nd pregnancy, 20.4% patients were in their 3rd pregnancy, 11.2% patients were in their 4th pregnancy, and 6% patients were in their >4x pregnancy. Higher incidence in first pregnancy is associated with infertility. Infertility is a risk factor of ectopic pregnancy.<sup>2</sup> Infertility could be caused by many factors such as endometriosis, PID, familial infertility, even the treatment to infertility itself.<sup>18</sup>

## CONCLUSION

There were 98 ectopic pregnancy patients found, the most commonly found age group was of 26-30 years, ectopic pregnancy incidence with not married patients were relatively high, hormonal contraception was more commonly found than intra uterine device in ectopic pregnancy patients, most of the ectopic pregnancy happened in the first pregnancy, Infection was the most commonly found variable, many factors can cause ectopic pregnancy, ectopic pregnancy could be caused by solely 1 risk factor or more (multifactorial).

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