

RISK ANALYSIS OF OVARIUM CANCER

LISDAYANTI SIMANJUNTAK

STIKes Mitra Husada Medan.

MESRIDA SIMARMATA

STIKes Mitra Husada Medan.

MARIANI BR MANALU

STIKes Mitra Husada Medan.

ROY SAPUTRA BERUTU

STIKes Mitra Husada Medan.

SAMIARNI SITOANG

STIKes Mitra Husada Medan.

NELLI RUSMEI SITOMPUL

STIKes Mitra Husada Medan.

Abstract

World Health Organization (WHO), in 2020, ovarian cancer ranks as the fourth most common cancer found in women in the world after breast cancer, colorectal cancer, and uterine corpus cancer. More than 200,000 deaths are recorded annually, which are predominantly women with weak economies in both developing and developed countries. The country with the highest number is sub-Saharan Africa, including South Africa (40/100,000). In Africa. Ranks sixth in Indonesia as a cancer disease. This type of research is a case control study with a retrospective approach (retrospective study), namely research that explains the relationship between the effect (ovarian cancer) and internal risks (family history, parity), and external risks (use of oral contraceptives, Drugs that increase fertility) The results of the study illustrate that there is a relationship between family history and the incidence of ovarian cancer at Melati Perbaungan General Hospital Medan. Based on the results of the study it was found that the variables associated with the incidence of ovarian cancer in the Pirngadi Medan General Hospital, family history, were $p=0.000$ ($p<0.05$) with $OR=12.00$, parity $p=0.001$ ($p<0, 05$) with $OR=9.07$, contraceptive use $p=0.001$ ($p<0.05$) with $OR=11.08$ and use of fertility drugs $p=0.027$ ($p<0.05$) with $OR=4.50$. It is suggested to health workers that promotion efforts be made to the public regarding factors related to the incidence of ovarian cancer but primary prevention efforts also need to be carried out. And to mothers who have paid attention to and care about the factors that influence the incidence of ovarian cancer and good health practices are expected to continue to maintain them.

Keywords: Risk Analysis, Ovary.

INTRODUCTION

Ovarian cancer is a malignant tumor of the ovary that has a variety of histogenicity, which can originate from all three germoblasts, both ekoderm, mesoderm and endoderm. This cancer based on the cells that make up the ovary can be divided into three main types, namely: epithelial, germinal and stromal ovarian cancer (Prawirohardjo, 2012)

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The country with the highest number is sub-Saharan Africa, including South Africa (40/100,000). In Africa, most patients with ovarian cancer are generally detected at a high stage of the disease (59.3% stage III).

Decreasing incidence and mortality of ovarian cancer has been documented in developed countries such as America, Canada and Scandinavia, this trend is not evident in developing countries due to the lack or inefficiency of screening programs.

However, recent data show that ovarian cancer is the leading cause of cancer death among women in the United States and Western Europe and has the highest mortality rate of all gynecological cancers.

Ovarian cancer ranks sixth in Indonesia as one of the most dangerous cancers in women after cervical cancer, breast cancer, colorectal cancer, skin cancer, and lymphoma cancer among the 10 most common cancers. The incidence of ovarian cancer in Indonesia is 20,426 cases out of 238,452,952 population. Fachlevy (2014)

Research by Johari & Siregar at the Adam Malik Central General Hospital in Medan showed that the number of visits of ovarian cancer sufferers to Haji Adam Malik General Hospital in 2009, 2010 and 2011 was recorded at 384, 366 and 391 cases per year respectively. (Gunardi, 2011)

Several risk factors are suspected of causing ovarian cancer, including: a family history of ovarian, mammary and colon cancer, genetic mutations, age over 50 years, women who do not have children, women who have children at the age of more than 35 years, history of use of hormonal therapy or contraception, and overweight, especially women with a Body Mass Index (BMI) of more than 30 kg/m². (Czyz AH, 2015)

Another study by Tarigan at Haji Adam Malik General Hospital Medan in 2014 with the number of cases of ovarian cancer as many as 38 people that based on the distribution of ovarian cancer risk factors were patients with parity > 1, namely 57.9% (22/38), 63 patients who breastfed .2% (24/38), the normal age of menarche was 86.8% (33/38), the patients who had menopause were 52.6% (20/38), the normal age of menopause was 36.8% (14/38), not using oral contraceptives amounting to 73.7% (28/38), without a history of gynecological surgery amounting to 84.2% (32/38), without a history of endometriosis namely 97.4% (37/38), not exposed to chemical substances, namely 73.7% (28/38), dietary consumption patterns are not excessive, namely 63.2% (24/38), patients who have a family history of cancer, amounting to 21% (8/38) and a family history of patients with cancer the ovary is 50% (4/8) of the existing genetic factors (Tarigan, 2014)

The initial survey that researchers conducted at the Medical Records Section of Melati Perbaungan General Hospital Medan found that the number of ovarian cancer sufferers fluctuated (up and down) every year, namely in 2013 there were 58 cases, in 2019 there were 84 cases, and in 2020 there were 53 cases.

The increase or decrease in the number of cases of ovarian cancer at Melati Perbaungan Medan General Hospital over the past few years is due to ovarian cancer not having clear symptoms so that ovarian cancer sufferers come for treatment at an advanced stage, it is proven that in 2017 as many as 6 people died (10.3%), in 2018 it increased to 12 people died and in 2019 as many as 4 people died.

Ovarian cancer cases were found from January to February 2016 outpatient and inpatient as many as 22 ovarian cancer patients.

Of the 22 cases of ovarian cancer, 15 were aged >45 years. Mothers who had a family history of ovarian cancer were 16 mothers, who had a history of parity in 10 mothers, 10 mothers used contraceptives and 3 mothers who had never used contraceptives had ovarian cancer. There were 11 mothers who used fertility drugs >1 year and 3 mothers who used <1 year.

These data show risk factors for ovarian cancer, namely internal risk factors (age, family history, parity), and external risk factors for use of contraception, drugs that increase fertility) with Prevention of ovarian cancer based on modifiable risk factors is important for women to know because It can reduce the occurrence of ovarian cancer.

RESEARCH METHODS

There are 10 mothers who use contraception and who have never used there are 3 mothers who suffer from ovarian cancer. There were 11 mothers who used fertility drugs >1 year and 3 mothers who used <1 year.

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This type of research is a case control study with a retrospective approach (retrospective study), namely research that explains the relationship between the effect (ovarian cancer) and internal risk factors (family history, parity), and external risk factors (use of oral contraceptives). , drugs that increase fertility) (Susiana. 2013) Hasil dan Pemba Hasan Penelitian

ANALYSIS RESULTS

Table 1: Characteristics

Characteristics	Case		Control	
	n =22	%	n=22	%
Education				
SD	9	40,9	0	0,0
JUNIOR HIGH SCHOOL	6	27,3	3	13,6
SENIOR HIGH SCHOOL	6	27,3	18	81,8
D3/S1	1	4,5	1	4,5
Work				
IRT	17	77,3	13	59,1
Trader	3	13,6	6	27,3
civil servant	1	4,5	2	9,1
Farmer	1	4,5	1	4,5
Income				
< IDR 1,000,0000	5	22,7	5	22,7
IDR 1,000,000 to IDR. 2,000,000	6	27,3	6	27,3
IDR 2,000,000 to IDR 3,000,000	9	40,9	9	40,9
> IDR 3,000,000	2	9,1	2	9,1

The sample in the study amounted to 44 people consisting of 22 cases (ovarian cancer sufferers) and 22 controls (not suffering from ovarian cancer). Based on Table 4.1. Based on the results of the research on the age of the respondents in the case group, most of the mothers were aged > 45 years, as many as 15 respondents (68.2%), fewer aged <30, proving that the age group of cases, if seen from age, is clear that the risk factors for ovarian cancer occur due to increasing age. .

Meanwhile, in the control group, there were more respondents aged 30-45 years, namely 12 respondents (54.5%), and a few aged >45, totaling 4 respondents (18.2%). The education of respondents in both the case and control samples at the elementary level was only in the case sample, namely 9 people (40.9%), at the junior high school level respectively 6 people (27.3%) and 18 people (81.8%), at the junior high school level, respectively.

SMA respectively 6 people (27.3%) and 18 people (81.8%), at the D3/S1 level each there are people (4.5%). Occupation in case and control samples at IRT respectively 17 people (77.3%) and 13 people (59.1%), at traders respectively 3 people (13.6%) and 6 people (27.3%) , civil servants 1 person (4.5%) and 2 people (9.1%), farmers 1 person (4.5%) each. Income of respondents in the case and control samples in the category <Rp. 1,000,000 each for 5 people (22.7%), in the Rp.1,000,000 to Rp. 2,000,000 each for 6 people (27.3%), in the category >Rp. 2,000,000 to Rp. 3,000,000 each for 9 people (40.9%) and categories >Rp. 3,000,000 each for 2 people

Table 2: Family History

No.	Family History	Case		Control	
		n	%	n	%
1.	There is a mother's family who suffered from ovarian cancer				
	Yes	16	72,7	4	18,2
	No	6	27,3	18	81,8
	Amount	22	100.0	22	100.0
2.	If yes, who has ovarian cancer				
	There isn't any	6	27.3	18	81.8
	Grandma	5	22,7	2	9,1
	Mother	6	27,3	2	9, 1
	Older brother	4	18,2	-	-
	Mother's sister	1	4,5	-	-
	Amount	22	100.0	22	100.0
3.	How many people in lineage who suffer from cancer				
	There isn't any	6	27,3	18	81,8
	1 person	9	40,9	2	9,1
	> 1 person	7	31,8	2	9,1
	Amount	22	100.0	22	100.0

Most of the respondents had a family history of cancer, as many as 16 respondents (72.7%), and a small number of respondents did not have a history of cancer, as many as 6 respondents (27.3%). In the control group most of the respondents did not have a family history of cancer as many as 18 respondents (81.8%), and a small number of respondents had a family history of cancer as many as 4 respondents (18.2%)

Table 3: Parity History

No.	Parity	Ovarian Cancer						p- value	OR (95%CI)
		Yes		No		Total			
		n	%	n	%	N	%		
1.	risky	17	77,3	6	27,3	23	52,3	0.001 --	9.07
2.	No risky	5	22,7	16	72,7	21	47,7		
	Amount	22	100.0	22	100.0	44	100.0		

Analysis of Odds Ratio (OR) obtained parity with high risk has a chance of 9.07 times the occurrence of ovarian cancer (OR = 9.07 with 95% CI. So it can be concluded that parity is the risk of ovarian cancer

Table 4: Contraceptive Use

No.	Use Contraception	Case		Control	
		n	%	n	%
1.	Mother never used contraception				
	Yes	19	86.4	18	81.8
	No	3	13,6	4	18,2
2.	If yes, what type of contraception was used				
	Pill	13	59,1	1	4,5
	Inject	6	27,2	3	13,6
	Implants (KB implants)	-	-	4	18,2

IUDs	-	-	10	45.5
Do not use	3	13,7	4	18,2
Amount	22	100.0	22	100.0

Cross Tabulation between Contraception and Ovarian Cancer

No.	Contraception	Ovarian Cancer						p - value	OR (95%CI)
		Yes		No		Total			
		N	%	n	%	N	%		
1.	Yes	19	86.4	8	36,4	27	61,4	0.001	11.08
2.	No	3	13,6	14	63,6	17	38,6		
	Amount	22	100.0	22	100.0	44	100.0		

Contraception with the incidence of ovarian cancer shows that out of 17 respondents in the category not at risk of experiencing ovarian cancer, most of them did not experience ovarian cancer as many as 14 people (63.6%) and of the 27 respondents in the category at risk of experiencing ovarian cancer, most of them experienced ovarian cancer, namely as many as 19 people (86.4%). Based on the results of the chi-square statistical test contained in Table 4.13, it is obtained that $p\text{-value} = 0.001 < \alpha = 0.05$, which means that H_0 is rejected H_a is accepted, so it can be concluded that there is a relationship between contraceptive use and the incidence of ovarian cancer.

Based on the Odds Ratio (OR) analysis, a value of 11.8 was obtained with a high risk of having a chance of 11.08 times the occurrence of ovarian cancer (OR = 11.08 with 95% CI). So it can be concluded that contraception is a risk factor for ovarian cancer

Table 5: Use of Fertility Drugs

No.	Use of Fertility Drugs	Case		Control	
		n	%	n	%
1.	Mother has used drugs that increase fertility				
	Yes	14	63,6	18	81.8
	No	8	36,4	4	18,2
2.	If yes, how long did you use				
	Do not use	8	36,4	4	18,2
	Using < 1 year	3	13,6	14	63,6
	Using >1 year	11	50.0	4	18,2
	Amount	22	100.0	22	100.0

Fertility Drug Use with Ovarian Cancer Incidence

No.	Fertility Medicine	Ovarian Cancer						p - value	OR (95%CI)
		Yes		No		Total			
		N	%	n	%	N	%		
1.	Yes	11	50.0	4	18,2	15	34,1	0.027	4.50
2.	No	11	50.0	18	81.8	29	65,9		
	Amount	22	100.0	22	100.0	44	100.0		

Fertility drugs with the incidence of ovarian cancer showed that of the 29 respondents in the category not at risk of experiencing ovarian cancer, most of them did not experience

ovarian cancer as many as 18 people (81.8%) and of the 15 respondents in the category at risk of experiencing ovarian cancer, most of them experienced ovarian cancer. namely as many as 11 people (50.0%). Based on the results of the chi-square statistical test contained in table 4.24, it is obtained that $p\text{-value} = 0.027 < \alpha = 0.05$, which means that H_0 is rejected, H_a is accepted, so it can be concluded that there is a significant relationship between the use of fertility drugs and the incidence of ovarian cancer.

Based on the Odds Ratio (OR) analysis, a value of 4.50 was obtained where the high-risk fertility drug variable had a 4.50 times the chance of ovarian cancer (OR = 4.50 with 95% CI). So it can be concluded that fertility drugs are a risk factor for ovarian cancer

The results of the study illustrate that there is a relationship between family history and the incidence of ovarian cancer at Dr. Pirngadi Medan. This can be seen from 20 respondents with a family history of ovarian cancer, as many as 16 people (72.7%) experienced ovarian cancer and from 24 respondents who had no family history of ovarian cancer, 18 people (81.8%) did not have ovarian cancer. The results of the analysis of differences in the proportion of exposure to risk factors between the case group and the control group were statistically $p = 0.000$ ($p < 0.05$) with OR = 12.00; CI with 95% CI means that the family history variable influences

Parity is a term to indicate the number of pregnancies for a woman who gives birth to live babies in each pregnancy. Parity is determined from the number of pregnancies that reach 20 weeks and not from the number of babies born. Therefore, parity is not greater if a single, twin, or quintuplet fetus is born, or smaller if the fetus is stillborn. Parity is a summary of the pregnancy history and 2 digits are used for documentation. Adding these two numbers gives the score for the previous pregnancy. For example, 0+0 means no history of previous pregnancy. The first number is the number of live fetuses, plus the number of live fetuses after 24 weeks of gestation. The second number is the number of pregnancies before 24 weeks where the fetus is not born alive (Irianto, 2012)

According to Irianto, the use of hormonal contraception containing hormones, one of which is progesterone, this hormone functions to thicken cervical mucus and reduce the ability of the uterus to accept fertilized cells. However, this hormone also facilitates the conversion of carbohydrates into fat, so that often a side effect of using hormonal contraception is fat accumulation which causes weight gain. Meanwhile, one of the properties of fat is that it is difficult to react or to be related to water, so organs that contain a lot of fat tend to have a small/dry water content. This condition can also occur in the vaginal area, so that the vagina becomes dry, and causes pain (dyspareunia). during sexual intercourse, and if this condition lasts a long time it will cause a decrease in arousal and sexual dysfunction in women, and this situation can trigger exposure to the HPV virus due to irritation in the vaginal area. The side effects of using injections are menstrual disorders, menstrual disorders that are often found in the form of shortened or elongated menstrual cycles, heavy or small bleeding, irregular bleeding or spotting, no menstruation at all (amenorrhea). This is due to a hormonal imbalance so that the endometrium undergoes histological changes.

It can be seen from the 15 respondents who were at risk of experiencing ovarian cancer as many as 11 people (50.0%) experienced ovarian cancer and from 29 respondents who were not at risk of experiencing ovarian cancer as many as 11 people (50.0%) experienced ovarian cancer. The results of the analysis of differences in the proportion of exposure to risk factors between the case group and the control group were statistically $p = 0.027$ ($p < 0.05$) with $OR = 4.50$; $CI 1.14:17.68$ means that the fertility drug variable influences the incidence of ovarian cancer at Melati Perbaungan Medan General Hospital.

Drugs that increase fertility or fertility, such as clomiphene citrate and gonadotropin drugs, such as Follicle Stimulating Hormone (FSH) and Luteinizing Hormone (LH), can induce ovulation either single or multiple. The use of these drugs can increase a woman's risk of developing ovarian cancer. In the use of clomifencitrate for more than twelve cycles, it can increase the relative risk by eleven times to become ovarian cancer

CONCLUSION

The research on risk factors associated with the incidence of ovarian cancer at Melati Perbaungan Medan General Hospital can be concluded as follows: Variables associated with the incidence of ovarian cancer at the Pirngadi Regional General Hospital Medan are family history, parity, contraceptive use use of fertility drugs

Acknowledgements

The author expresses his infinite gratitude for the contribution from Stikes Mitra Husada Medan so that this research can be completed.

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