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RESEARCH

Comparison of the Risk Malignancy Index Value of Ovarian Cancer Serosum and Musinosum Type Dr. M. Djamil Padang in 2017

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Abstract

The Risk Malignancy Index (RMI) is one of the simplest assessments that can assist in diagnosing and determining the prognosis of benign and malignant adnexa masses. Epithelial carcinoma is the most common type of about 90% of ovarian cancers. As many as 35-40% of the epithelial type are serous and 6-10% are musinosum.This study aims to compare the picture of RMI value on the incidence of ovarian cancer serosum and musinosum type. This study was cross sectinal comparative study from medical records of ovarian cancer patients at obstetrics and gynecology section in DR M Djamil Hospital Padang from January 1st, 2017 until December 31st, 2017. The population was found one hundred and forty of patients with ovarian cancer and only one hundred and twenty nine of patients met the inclusion criteria and there were no exclusion criteria. Next RMI value is calculated based on RMI 1 formula, result is described in tabular form and data processing with SPSS program. Conclucion of this study is there were no differences in age distribution, ascites occurrence and age of menopause in serous and musinosum ovarian cancer. There is a difference in Ca, 125 levels in serous with musinosum ovarian cancer which also contribute to the high value of RMI. The mean value of patients's RMI in serous type ovarian cancer is higher than the mean value of RMI in patients with type Musinosum ovarian cancer.

***Keywords:** index of risk malignancy, menopause, ultrasonography, anatomic pathology, serous ovarian carcinoma*

INTRODUCTION

In most developed countries, ovarian cancer is the second most common malignancy of the female genital organs, after endometrial cancer, but the death rate due to ovarian carcinoma is higher than all other gynecological malignancies. Serosum ovarian carcinoma has a worse prognosis than the mucinous type.[1] Ovarian carcinoma mortality is mainly due to difficulty in diagnosing the disease early and due to tumor invasion and metastasis.[2] Ovarian cancer deaths are mainly due to difficulty in diagnosing the disease at an early stage and the absence of appropriate screening markers.[3]

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The high mortality rate still occurs in developing countries for ovarian cancer. However, there is no definite data on the incidence of ovarian cancer and mortality in Indonesia. A study in 2002 revealed that ovarian cancer is the third most common female cancer in Indonesia (829 new cases and 7.77% of all female cancers). In RSUP M. Djamil Padang, there was an increase in the incidence of ovarian cancer from 103 cases in 2011 to 156 cases in 2012. The increase in cases occurred by 50% from 2011 to 2012. In 2011 there were seven deaths due to ovarian cancer. (14%) and in 2012 11 cases (14%). It appears that there is no improvement in ovarian cancer treatment outcomes.[2]

Ovarian cancer is divided into 4 types based on the tissue of origin, namely epithelium carcinoma, germ cell carcinoma, sex cord-stromal carcinoma, and metastases from other places.[4] Epithelium carcinoma is the most common type, about 90% of ovarian cancer.[5] Epithelial type includes more than 60% of benign epithelial ovarian tumors and more than 90% of ovarian carcinomas. A total of 35-40% are serous, 6- 10% mucinous, 15-25% endometrioid, 5% clear cell, and <1% Brenner.[6]

At Cipto Mangunkusumo Hospital, Jakarta, of all the epithelial cancers, the serosum type (44%) was most often found than the mucinosum (19.66%), another fraction was the endometrioid type (10.26%), clear cell (5.13%).) and mixed epthelial tumors (0.85%).[7]

The serous type microscopically has epithelial-like cells in the fallopian tubes in well-differentiated tumors or anaplastic cells with severe nuclear atypia in poorly differentiated tumors.[8] Endometrioid types are usually poorly differentiated so that they cannot be easily distinguished from serous types. The mucinous type contains epithelial cells filled with mucin, and is benign. These cells are similar to cells in the endocervix and intestinal cells. The clear cell type is seen as the cell with the most glycogen and Hobnail cells also have nuclei that protrude deep into the outer cystic lumen of the clear border of the cell cytoplasm.[9,10]

Stage FIGO is to date an independent prognostic factor for ovarian carcinoma. In Rusnita's research, Prijono Tirtoprodjo, Irianiwati regarding the expression of p53, Bcl-2 and nm23-H1 in ovarian carcinoma, in 2014, an early stage serosum type ovarian carcinoma was 40% and an advanced stage was 60%.[11] Early stage mucinous type ovarian carcinoma was 84% and advanced stage was 16%. Serosum type ovarian carcinoma is more found in advanced stage and high grade compared to mucinosum type because most serosum type carcinomas develop de novo from the surface epithelium and grow rapidly without recognizing the precursor lesion. Meanwhile, mucinous type ovarian carcino-ma develops from a precursor lesion in the form of a cystadenoma.[12]

The ability to detect ovarian cancer early is very important in an effort to reduce morbidity and mortality it causes. Current efforts are aimed at finding the disease as early as possible when it is not clear that ovarian tumors are present.[4] If an ovarian tumor has been obtained, an examination is carried out to predict the malignancy of the tumor before

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surgery, because there are differences in the treatment of benign ovarian tumors and ovarian malignancies. Various modalities for predicting ovarian tumor malignancy have been investigated and provide their own accuracy.[13,14]

Screening requires high sensitivity to detect early stage disease. These tests must also be of sufficient specificity to protect patients with false positive results from diagnostic evaluation.[15] To date, no tumor marker has shown a benefit in increasing survival in screening controlled studies in the general population. However, tumor markers can play an important role in detecting disease and assessing response to therapy. The malignancy risk index (RMI) is a simple scoring system that can be used to assess mass adnexa. The RMI scoring system is based on menopausal status, ultrasound and serum Ca-125 concentration. Scoring provides a better method of assessing adnexal mass.[15,16]

Based on the high number of ca ovarian sufferers, initial screening plays a very important role in the prognosis of ovarian ca. So that the authors are interested in conducting research on the RMI value in ovarian cancer patients at RSUP Dr. M Djamil Padang in 2017, as the highest cancer rate in women and a worse prognosis which can be related to the results of anatomical pathology examinations of ovarian serosum and mucosum cancer as cancer. the most ovaries.

METHOD

This type of research is descriptive analytic with a cross sectional study design. This study was conducted by looking at the status of the patient's medical record comparing the RMI value of the serosum type ovarian cancer and the mucinous type in Dr. M.Djamil on January 1, 2017 - December 31, 2017. The inclusion criteria were all patients with ovarian cancer with the results of PA type serosum and mucinosum type at RSUP Dr. M. Djamil Padang on January 1, 2017 - December 31, 2017. The exclusion criteria were ovarian cancer patients whose PA results did not show serosum or mucosum type ovarian cancer at Dr. M. Djamil Padang on 1 January 2017 - 31st December 2017. Patients whose medical records do not have this data.

The sample selection was done by total sampling, namely all ovarian cancer patients with the results of PA serosum and mucinosum who met the inclusion and exclusion criteria in Dr. M. Djamil Padang on January 1, 2017 - December 31, 2017.

In this study, using univariate analysis to describe the RMI value in serosum and mucosum type ovarian cancer at Dr. M Djamil which will be displayed in tabular form.

RESULTS AND DISCUSSION

A study was conducted to determine the comparison of the RMI value in serosum type ovarian cancer and the type of mucosum in Dr. M. Djamil on January 1, 2017 - December 31, 2017 which was conducted on 129 patients based on a cross sectional study approach. Differences

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in the characteristics of respondents in serosum type ovarian cancer and mucinous type in Dr. M. Djamil on 1 January 2017 - 31 December 2017 can be seen in table 1 below:

Table 1. Differences in the Characteristics of Respondents

Characteristics	Serosum Type Ovarian Cancer (n=81)	Musinosum Type Ovarian Cancer (n=48)	p-value
Age (year)	46,11 ± 12,06	44,17 ± 12,72	0,388
Ascites			
No	36 (4,4%)	28 (58,3%)	0,179
Yes	45 (55,6%)	20 (41,7%)	
Menopause			
< 50 years	60 (74,1%)	40 (83,3%)	0,318
> 50 years	21 (25,9%)	8 (16,7%)	
Ca125	217,12 ± 32,04	105,52 ± 47,68	0,000

Table 1 shows that the mean age of respondents in patients with serosum type ovarian cancer is 46.11 ± 12.06 years and in patients with mucinous type ovarian cancer 44.17 ± 12.72 years. The results of statistical tests showed that there was no age difference in serosum and mucinous ovarian cancer patients p = 0.388 (p> 0.05). The distribution of patients with ascites in serosum type ovarian cancer was 45 (55.6%) and in ovarian cancer patients. mucinosum type 20 (41.7%). The results of statistical tests showed that there was no relationship between patients who had ascites and serosum and mucinal type ovarian cancer p = 0.179 (p> 0.05).

The age distribution of menopause which was categorized as> 50 years in serosum type ovarian cancer was 21 (25.9%) and in mucinosum type ovarian cancer patients 8 (16.7%). The statistical test results showed that there was no relationship between menopause age and ovarian cancer with serosum and mucinosum types p = 0.179 (p> 0.05). The mean Ca125 of respondents in patients with serosum type ovarian cancer was 217.12 ± 32.04 and in ovarian cancer patients mucinosum type 105.52 ± 47.68. The results of statistical tests showed that there were differences in Ca125 in patients with serosum and mucinous ovarian cancer p = 0.000 (p <0.05).

An overview of the RMI value in serosum and mucinosum type ovarian cancer can be seen in table 2 below:

Table 2. Overview of RMI Value in Ovarian Cancer Serosum and Musinosum Type

Variable	Group	
	Serosum Type Ovarian Cancer (Mean ± SD)	Musinosum Type Ovarian Cancer (Mean ± SD)
RMI Value	542,67 ± 449,31	272,23 ± 117,10

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The mean RMI value in patients with serosum type ovarian cancer was 542.67 ± 449.31 and in patients with mucinous type ovarian cancer 272.23 ± 117.10.

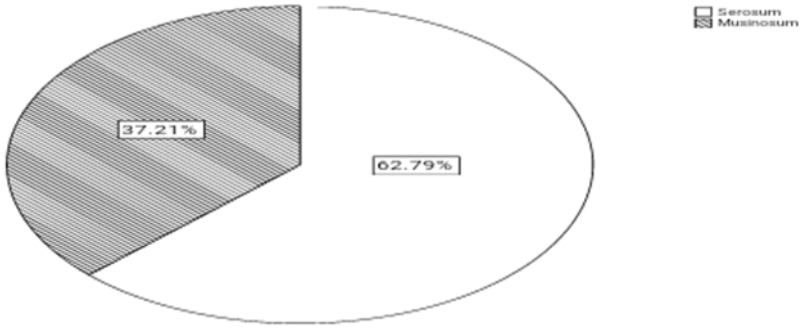

Figure 1 Proportion of Serosum and Musinosum Type Ovarian Cancer

Figure 1 shows that more than half of the respondents experienced serosum type ovarian cancer, namely 81 people (62.8%) compared to 48 people (37.2%).

Comparison of RMI values in serosum and mucinosum type ovarian cancer can be seen in Table 3 below

Table 3. Comparison of RMI Value in Ovarian Cancer Serosum and Musinosum Type

Variable	Group		p-value
	Serosum Type Ovarian Cancer (Mean ± SD)	Musinosum Type Ovarian Cancer (Mean ± SD)	
RMI Value	542,67 ± 449,31	272,23 ± 117,10	0,000

The mean RMI value in patients with serosum type ovarian cancer was higher, namely 542.67 ± 449.31 compared to patients with mucinous type ovarian cancer 272.23 ± 117.10. The results of statistical tests showed that there was a difference in the RMI value in patients with serosum and mucinous ovarian cancer p = 0.000 (p <0.05).

The risk of malignancy index (RMI) is a scoring system of a combination of various clinical features. It has been developed to increase the diagnostic accuracy for ovarian malignancies. Jacob et al. (1990) initially developed an RMI based on ultrasound findings, menopausal status, and serum CA 125 levels.By using the RMI at a cut of 200 to indicate malignancy, called RMI 1, the sensitivity and specificity were 85.4% and 96.9%, respectively. , then developed the RMI 2 Direct comparison showed that RMI 2 was significantly better at predicting malignancy than RMI 1 (p value <0.001). RMI 2 gave 80% sensitivity, 92% specificity and 83% positive predictive value while RMI 1 gave 71% sensitivity, 96% specificity, and 89% positive predictive value.[16,17]

The results of RMI validation using RMI as a protocol for selecting patients at risk of cancer found that the lower the RMI value or <25 the risk of cancer was only 3%, the RMI 25-

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250 the risk of cancer was 20, and the RMI> 250 the risk of cancer was 75%. The results of research conducted by Pemaron (2013) found that from 35 samples, 15 samples showed malignant ovarian tumors, namely 42.9%, and 20 showed benign ovarian tumors, namely 57.1%. Of all those found to be malignant, 93.3% were epithelial and 6.7% were non-epithelial. Ovarian malignant tumors are tumors with a variety of histiogenesis, can originate from the three dermoblasts (ectodermal, endodermal, and mesodermal) with various histiological and biological characteristics.[18]

Most ovarian cancers are epithelial types, 90% of ovarian cancers originate from epithelial, 75% of ovarian cancers originating from epithelial have serous histological types, 20% are mucinous, 2% are endometrioid, while clear cell, brenner, and undifferentiated carcinomas are less than 1%. Compared with epithelial ovarian cancer, non-epithelial ovarian cancer accounts for 10% of all ovarian cancers.[19]

The results showed that the mean RMI value in patients with serosum type ovarian cancer was higher, namely 542.67 ± 449.31 than in patients with mucinous type ovarian cancer 272.23 ± 117.10. The results of statistical tests showed that there was a difference in the RMI value in patients with serosum and mucinous ovarian cancer $p = 0.000$ ($p < 0.05$). More than half of the respondents experienced serosum type ovarian cancer, namely 81 people (62.8%) compared to 48 people (37.2%).

Some of the potential advantages of RMI include rapid classification of patients in the referral system and multiple benign mass surgeries performed by oncologists, furthermore there will be less need for repeat surgery. If more women were operated on early in the course of the cancer, this could result in increased survival. RMI is easy to use however, not yet routinely implemented in North America.[20]

Based on the analysis of the researchers, there are differences in the RMI value in patients with ovarian cancer where the RMI value is higher in patients with serosum type ovarian cancer than in mucinosum. This happened because the RMI was obtained from the multiplication of ultrasonography, menopause status and Ca125.

CONCLUSION

There is a difference in the RMI value in patients with serosum and mucinosum type ovarian cancer at Dr. M. Djamil on January 1, 2017 - December 31, 2017, where the RMI value was higher in serosum type cancer patients compared to mucinosum.

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