

**ANALYSIS FACTORS OF BREAST LESION CASE IN
RSUD DR. SOETOMO SURABAYA**

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ABSTRACT

Introduction: According to data from the Indonesian Ministry of Health, the prevalence of breast tumors increased in 2015-2017. From 1.8 per 100 women to 21.3 per 100,000 women aged 30-50 years. The most common types of benign breast found in women worldwide are fibrocystic breast changes and fibroadenoma. Aim: This research aims to analyze the factors of age, age at menarche, parity, use of hormonal drugs, and family history with the incidence of benign breast lesions in RSUD Dr. Soetomo Surabaya. Methods: This research method is an analytic observational case-control approach and consists of a case group and a control group of 41 respondents in each group. The statistical test of this study used the Chi-square test, Independent t-test, the Mann-Whitney method, and the Odds Ratio (OR). Results: The results of statistical tests obtained age factor $p(\text{sig})=0.002$, hormonal use $p(\text{sig})=0.000$, family history $p(\text{sig})=0.016$, age at menarche $p(\text{sig})=0,282$, and parity $p(\text{sig})=0.568$. Conclusion: There is a relationship between age, use of hormonal drugs, and family history, and there is no relationship between age at menarche and parity with the incidence of benign breast lesions in RSUD Dr. Soetomo Surabaya. Family history has an Odds Ratio (OR) of 4.796.

Keywords: Breast lesion, reproductive health.

ABSTRAK

Latar Belakang: Menurut data Kementerian Kesehatan RI, prevalensi tumor payudara meningkat pada tahun 2015-2017. Dari 1,8 per 100 perempuan menjadi 21,3 per 100.000 perempuan berusia 30-50 tahun. Jenis lesi jinak payudara yang paling umum ditemukan pada perempuan di seluruh dunia adalah perubahan payudara fibrokistik dan fibroadenoma. Tujuan: Penelitian ini bertujuan untuk

menganalisis faktor usia, usia menars, paritas, penggunaan obat hormonal, dan riwayat keluarga dengan kejadian lesi jinak payudara di RSUD Dr. Soetomo Surabaya. Metode: Metode penelitian ini adalah analitik observasional pendekatan case control dan terdiri dari kelompok kasus dan kelompok kontrol 41 responden di setiap kelompok. Uji statistik penelitian ini menggunakan uji Chi Square, Independent t-test, metode Mann-Whitney, dan Odds Ratio (OR). Hasil: Hasil uji statistika didapatkan faktor usia $p(\text{sig})=0,002$, penggunaan hormonal $p(\text{sig})=0,000$, riwayat keluarga $p(\text{sig})=0,016$, usia menars $p(\text{sig})=0,282$, serta paritas $p(\text{sig})=0,568$. Kesimpulan: Terdapat hubungan antara usia, penggunaan obat hormonal, dan riwayat keluarga, serta tidak ada hubungan antara usia menars dan paritas dengan kejadian lesi jinak payudara di RSUD Dr. Soetomo Surabaya. Riwayat keluarga memiliki nilai Odds Ratio (OR) 4,796.

Kata Kunci: *Lesi payudara, kesehatan reproduksi.*

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INTRODUCTION

Benign breast disease is a broad term for many non-cancerous lesions, such as benign tumors, trauma, mastoid pain, and nipple discharge.¹ The most common benign non-cancerous lesions are fibrocystic changes in the breast. Breast fibrocystic changes can occur naturally in the breast and have thicker breast tissue that can be felt through the skin.² The Nursing of Health Study II reported that the rate of fibrocystic breast changes and other benign abnormalities was found

in 30.9 per 1.000 people (3,1%) per year. Fibrocystic changes in the breast do not increase the risk of breast cancer, but having changes or a lump in the breast can make it difficult to feel a new breast lump or other unusual changes. The incidence of the fibrocystic breast that occurred in Firuzgar and Sadr Hospital Iran, between 2007 and 2012 was 55.5% in 71 of 128 patients who underwent histopathological examination. In other countries such as Africa and Nigeria, fibrocystic breast incidence was 444 cases (23.8%). This

prevalence indicates that fibrocystic breast changes are the most common benign breast lesion found in women worldwide. This figure shows that more than 50% of cases of fibrocystic breast changes can affect women.

The most common benign neoplastic breast lesion is mammary fibroadenoma (FAM). Fibroadenoma (FAM) is an abnormal mass caused by continuous cell growth.³ This type of lesion accounts for one-third of all cases of benign breast tumors.⁴ According to the American Cancer Society, simple fibroadenoma does not appear to increase the risk of breast cancer significantly. However, complex fibroadenoma appears to increase the risk slightly more than simple fibroadenoma. Data from the East Java Provincial Health Office in 2019 stated that breast tumors reached 12.186 cases. Based on these numbers, the incidence of benign breast lesions continues to increase.⁵ The incidence of benign breast lesions is a change that occurs in the breast and is associated with hormonal changes in women; with an increase in this number, it is necessary to examine the factors causing the occurrence of benign

breast lesions. The increasing prevalence of events describes a woman's reproductive health level.

The etiology of benign breast disease has been shown is clinically relevant in women treated with estrogens and anti-estrogens. Estrogen is one of the important hormones, acting like female physiology. The role of estrogen stimulates the proliferation of mammary gland epithelial cells, induces the growth of mammary lobes, lobules and ducts by binding to estrogen receptors.⁶ Unbalanced estrogen levels, excess estrogen can affect breast health and trigger other reproductive health problems. Regarding the etiology, hormonal changes in the female body can be influenced by several factors, and in addition to the increase in benign breast lesions, additional studies are needed to identify risk factors associated with the occurrence of benign breast lesions. These risk factors include age, age at menarche, parity, use of hormonal drugs, and family history.

In line with this background, it is necessary to conduct further research on the risk factors associated

with the incidence of benign breast lesions in RSUD Dr. Soetomo Surabaya. RSUD Dr. Soetomo Surabaya is an Indonesian government-owned hospital located in Surabaya and is a referral hospital. This study describes the prevalence of benign breast lesions in the Surabaya area and to know the associated risk factors and be able to take early prevention so that efforts, so that the incidence of benign breast lesions can decrease.

METHODS

This research is quantitative with an observational analytic design through a case-control approach. The population in this study were patients with benign lesions as the case group and patients with malignant lesions as the control group. The group of cases with inclusion criteria were patients with benign breast lesions at RSUD Dr. Soetomo Surabaya was registered in 2017-2021, based on histopathological examination, the Anatomical Pathology examination code letters T and F, the conclusion of the examination of fibroadenoma and or fibrocystic changes in the breast, and the patient's mobile number in the medical record. The inclusion

criteria for the control group were patients with malignant lesions at RSUD Dr. Soetomo Surabaya was registered in 2018-2021, based on histopathological examination, the code for the Anatomical Pathology examination result letter T, the conclusion of the invasive breast carcinoma examination, and the patient's mobile number in the medical record. The sampling technique is purposive sampling, totaling 41 respondents.

Methods in collecting data through secondary data using patient medical records to obtain patient's diagnosis according to histopathological examination, patient's cellphone number, and primary data collection through interviews or questionnaires with the Zoho form application to obtain other data.

Research variables include several factors, namely age, age of menarche, parity, use of hormonal drugs, and family history. Research analysis includes univariate analysis, bivariate analysis, Odds Ratio (OR), and Confidence Interval (CI) value of 95% (α

= 0.005). The univariate analysis describes the frequency of the variables in each group. The bivariate analysis aims to analyze the independent and dependent variables using SPSS with an independent t-test for the age variable. Parity, hormone use, and family history variables were calculated using the chi-square test. Variable ages of menarche using the Mann-Whitney test. Odds ratio analysis to compare exposure between patients and controls.

RESULTS

The results showed that most social statuses were married and had children (81.71%). The social status

of being married and having children will certainly breastfeed (79.3%), mostly breastfeeding 2-3 children (59.76%).

According to the government program, a woman who has a family is recommended to do family planning, and it is also recommended to use contraception to regulate the distance between pregnancies to create a quality family. Most of them are contraceptive users (54.9%) with a duration of use <5 years (37.80%). Based on age distribution, most of them were >40 years old (69.5%) and had no family history of breast disease (78.1%).

Table 1. Results of Univariate Analysis

Variable	Category	Type of Disease				Total	
		Benign Lesions		Malignant Lesions		N	%
		n	%	n	%		
Social status	Unmarried	6	14.6	6	14.6	12	14.6
	Married	34	82.9	33	80.5	67	81.7
	Death divorce	1	2.4	1	2.4	2	2.4
	Divorced	0	0	1	2.4	1	1.2
Child status	Having children	32	78.1	35	85.4	67	81.7
	Don't have	9	22	6	14.6	15	18.3
Many children breastfeeding	1	8	19.5	5	12.2	13	15.9
	2-3	21	51.2	28	68.3	49	59.8
	>3	1	2.4	2	4.9	3	3.7
	Not breastfeeding	11	26.8	6	14.6	17	20.7
Duration of contraceptive	<5 years	18	43.9	13	31.7	31	37.8
	>5 years	8	19.5	19	46.3	27	32.9
	Not using contraceptive	15	36.6	9	22	24	29.3
Parity	Nullipara	9	21.1	6	14.6	15	18.3
	Primipara	8	19.5	2	4.9	10	12.2
	Multipara	24	58.5	33	80.5	57	69.5
	Grandemultipara	0	0	0	0	0	0

Table 2. Results of Bivariate Analysis

Variable	Category	Type of Disease		p(sig)		
		Benign Lesions n	%		Malignant Lesions n	%
Age	>18 years	1	2.4	0	0	0.002
	18-30 years	8	19.5	1	2.4	
	31-40 years	10	24.4	5	12.2	
	>40 years	22	53.7	35	85.3	
Age of menarche	7 -12 years	11	26.8	10	24.4	0.282
	13-25 years	30	73.2	31	75.6	
Parity	Nullipara	9	22	6	14.6	0.568
	Primipara dan Multipara	32	78.1	35	85.4	
Hormonal drugs	Use	14	34.2	31	75.6	0.000
	Not using	27	65.9	10	24.4	
Family history	Have a history	14	34.15	4	9.76	0.016
	Don't have	27	65.85	37	90.24	

From the survey results, the majority (69.51%) of respondents are in their >40 years old or older. The statistical test result is 0.002, which means that there is a significant relationship between age and the incidence of benign breast lesions in the RSUD Dr. Soetomo Surabaya.

The age of menarche is described mostly at the age of 13-25 years (75.6%). The statistical test results as much as 0.282 mean no significant relationship between the age of menarche and the incidence of benign breast lesions in RSUD Dr. Soetomo Surabaya. The study results describe that most of them have given birth (81.71%). The statistical test result was 0.568, and there was no significant association regarding

parity with benign breast lesions at RSUD Dr. Soetomo Surabaya.

Analysis of the use of hormonal drugs in the study results showed that the majority of respondents were users of hormonal drugs (52.88%). The statistical test result of 0.000 means that there is a significant relationship between the use of hormonal drugs and the incidence of benign breast lesions at RSUD Dr. Soetomo Surabaya. The study results on family history illustrate that the majority of respondents do not have a family history of breast disease (78.04%). The statistical test result of 0.016 means a significant relationship between family history and the incidence of benign breast lesions at RSUD Dr. Soetomo Surabaya

Table 3. Results of Risk Analysis

Variable	p(sig)	Odds Ratio (OR)	95% CI
Age of Menarche	0.282	1.137	0.42 – 3.07
Parity	0.568	1.641	0.53 – 5.12
Hormonal Drugs	0.000	0.167	0.64 – 0.44
Family History	0.016	4.796	1.42 – 16.10

Women with a family history of breast disease were 4.7 times more likely to develop benign breast lesions than women with no family history of breast disease.

DISCUSSION

Benign breast lesions can be influenced by several factors, some of which affect hormone levels in the body.

Age

The results showed that most of them SADARI behavior as a preventive measure to detect breast abnormalities were >40 years old (69.51%). In the study results, patients with malignant lesions had more numbers (85.36%) than patients with benign lesions (53.66%). Age is a risk factor for developing breast cancer or cancer due to the effects of prolonged hormonal exposure and increasing age-related to internal hormones, especially estrogen. Research has shown that benign breast mass and malignant breast

mass can be compared when women are over 40 years old or entering menopause, because the involvement of female hormones and changes in menopausal hormones can affect women's reproductive health, such as the mammary glands.

Another study conducted by Marice Sihombing and Aprildah Nur Sapardin in five sub-districts in Central Bogor Regency showed a significant relationship between age and the incidence of breast tumors with p(sig) 0.000, where respondents were dominated by the age of 40 years.⁸ Based on the research analysis results, age is included in a fixed or irreversible factor, and most patients with malignant and benign lesions are over 40 years old. Therefore, when women have entered menopause or are over 40 years old, it is expected to increase

Age of Menarche

Based on the study results, the majority of respondents experienced menarche at the age of 13-25 years

(74.39%). Results show that patients with malignant lesions had more numbers (75.61%) and patients with benign lesions (73.17%). The age of menarche is the age at which a woman experiences her first menstruation. Usually, the age of menarche is experienced between the ages of 10-16 years and will occur in adolescent girls in their early teens, namely the age of 10-13 years.⁹ The age of menarche is related to the duration of exposure to estrogen and progesterone, which can affect the proliferation of breast tissue.¹⁰

The analysis results showed that the majority in each group did not experience menarche at an early age; this affected the statistical results to show that there was no significant relationship. Reviewed from the Odds Ratio (OR) value in this study 1.137, it means that women who have menarche at the age of 7-12 years or menarche earlier have a risk >1.1 times greater for benign breast lesions than women who menarche at the age of 13-25 years. The Odds Ratio illustrates that women who menarche at an early age are at greater risk for developing benign lesions

than malignant lesions. Age at menarche is not the only factor associated with breast disease. The age of menarche can be influenced by several factors, such as genetic factors, environmental factors, and lifestyle. The shift regarding the age of menarche is due to changes in lifestyle and consumption patterns.¹¹

Parity

The results showed that most respondents had given birth (81.71%). Most of the patients with benign lesions were multiparous (58.54%), and most of the patients with malignant lesions were also multiparous (80.49%). Multipara is when a woman has a history of giving birth more than once. Women who have given birth to children and are breastfeeding can reduce the effect of levels of the hormones estrogen and progesterone in the body that affect the proliferation of breast tissue. Another thing related to parity is hormonal changes in those women who have given birth also never breastfeeding; while breastfeeding women keep estrogen and progesterone levels low for a long time during breastfeeding, thereby reducing the impact of these

hormones on breast tissue proliferation.¹²

The breastfeeding process that is related to is exclusive breastfeeding. The breastfeeding process is related to exclusive breastfeeding. The definition of exclusive breastfeeding is breast milk or mother's milk given to a baby from birth for six months, without adding and or replacing food.¹³ In this study, the duration of the breastfeeding process was not found in each group, and most of the two groups had the same characteristics; this can affect statistical results. Regarding the Odds Ratio (OR) of this study, it was 1.641, indicating that a woman who has never given birth is >1.6 times more likely to develop benign breast lesions than a woman who has given birth. A woman who gives birth to fewer children can increase the incidence of breast disease.¹⁴ This suggests that women who have never given birth have a higher risk of developing a benign breast mass than a malignant breast mass.

Use of Hormonal Drugs

Based on the study results, the majority of respondents were users of hormonal drugs (52.88%). The

majority of patients with benign lesions were not users of hormonal drugs (65.85%), and patients with malignant lesions were mostly users of hormonal drugs (52.88%). The use of hormonal drugs in the research in question is contraception. Use of contraceptives that contain estrogen or estrogen and progesterone. Contraceptives used can increase the body's exposure to more hormone levels. The hormone estrogen has an important role in the reproductive process; when the hormone estrogen is not balanced, it can affect other reproductive organs. In the breast, the hormone estrogen functions as a process of growth and development of breast tissue. The use of hormonal drugs can cause excessive proliferation of breast tissue.¹⁵

Another study conducted by Dewi (2015) stated that there was a relationship between the use of contraception and cases of malignant breast tumors in Dr. Soetomo with a p(sig) value of 0.028 with Odds Ratio (OR) of 3.266. Reviewed from the magnitude of the risk in this study, the Odds Ratio (OR) value of 0.167 if a woman does not take hormonal drugs, it can reduce the risk of developing

benign breast lesions, but it can increase the risk of developing breast cancer if woman is a user of hormonal drugs. The Odds Ratio is related to the length of hormonal treatment because the longer a woman takes hormonal drugs, the higher the level of exposure to the hormones estrogen and progesterone in the body. In light of this, it should be taken into account that when a woman has been using hormonal drugs for more than five years, there is an increased incidence of malignant breast lesions.

Family History

The study results showed that the majority of respondents with a family history did not have breast disease (78.04%). Most of the patients with benign lesions had a family history without breast disease (65.85%), and most of the patients with malignant lesions had a family history without breast disease (90.24%). Ministry of Health RI No. 796 of 2010 states that family history is one of the risk factors for breast cancer. When a woman has a first-degree relative with a history of breast cancer, it increases the risk of developing breast disease.¹⁶ Family history can identify a higher risk of

developing a disease. In addition, family history is important for screening for breast disease.

Research conducted by Alini and Lise Widya (2018) regarding the factors associated with FAM incidence at the General Surgery Clinic of Bengkalis Hospital stated that family history had a significant relationship with fibroadenoma or benign breast disease. The risk indicates that women with a family history of breast disease are six times more likely to develop breast tumors than a family history without breast disease.¹⁷ Based on the Odds Ratio (OR) in this study with a value of 4.796, it means that women with a family history of breast disease have a 4.7 times higher risk for developing benign breast lesions. The analysis results stated that having a family history of breast disease increases the risk of benign breast lesions higher than malignant lesions.

CONCLUSION

The study results stated that age, use of hormonal drugs, and family history were associated with the incidence of benign breast lesions in RSUD Dr. Soetomo. Meanwhile, the age of menarche and parity were

described as having no significant relationship with the incidence of benign lesions at RSUD Dr. Soetomo Surabaya. The value of the largest Odds Ratio (OR) in the family history factor is 4.976 times at risk.

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