THE RELATIONSHIP OF AGE AND OBESITY WITH THE HISTOPATHOLOGICAL PROFILE OF MAMMAE FIBROADENOMA PATIENTS IN PASAR MINGGU HOSPITAL 2018-2019

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ABSTRACT

The Relationship of Age and Obesity With The Histopathological Profile of Mammae Fibroadenoma Patients RSUD Pasar Minggu 2018-2019. Fibroadenoma mammae (FAM) is the most common lesion among benign tumor cases in the world and also in Jakarta which occurs in 25% of women with peak onset between the ages of 15 and 35 years with clinical symptoms of a solitary mass, easy to move, supple and well demarcated. Several studies have shown an increase in BMI to be a risk factor for FAM, but until now there is no convention that shows the relationship between age and obesity with FAM. The purpose of this study is to determine the relationship between age and obesity with the histopathological profile of FAM in Pasar Minggu Hospital patients in 2018-2019. Observational analytic research method with a cross-sectional design, the sample was taken based on the consecutive sampling technique of secondary data from medical record sheets. The results showed that there was no significant relationship between the size and number of lesions (p=0.456 and p=0.894), there was no significant relationship between obesity and the size and number of lesions (p=0.267 and p=0.930). The conclusion of this study was to determine the major risk factors for the development of FAM, especially in young adolescent women. In connection with the above, education is needed to prevent and detect the emergence of FAM early.

Keywords: Age, Breast Tumor, Fibroadenoma Mammae, Obesity

1. Introduction

Fibroadenoma mammae (FAM) is the most common lesion among benign tumor cases in the world (Bhettani et al.2019). Globally distributed, FAM occurs in 25% of women with peak onset between the ages of 15 and 35 years. As a benign tumor, FAM consists of fibroplastic stroma and glands lined with breast epithelium. FAM usually appears on mammograms as well-defined masses, with or without popcorn-like calcifications, is pathognomonic and does not need further investigation (Stachs, Stubert, Reimer and Hartmann, 2019). The Ministry of Health of the Repughiblic of Indonesia shows the distribution of data nationally, until 2019 there have been found 84,1859 positive IVA, 28,910 breast tumors, 5,015 suspect cervical cancer, and 2,910 suspect breast cancer. DKI Jakarta occupies the second highest prevalence of breast tumors with 4,610 cases after West Java with 6,109 cases. The prevalence rate of FAM reached 9.6 per 1,000 people. This figure is much higher than the national average prevalence of 4.3 per 1,000 people (Indonesian Health Profile, Ministry of Health RI 2019).

Increasing Body Mass Index (BMI) is one of the rapidly increasing problems emerging worldwide, leading to socioeconomic and medical implications. The correlation between increased BMI and the development of breast cancer is valid, however, its correlation with benign breast disease is still under study (Pace et al., 2016). Bhettani et al. show 2019 study data in Pakistan from 300 patients with benign breast disease, out of 136 patients with high BMI, 42 patients (30.8%) had FAM while out of 74 patients with low BMI, 8 patients (10.8%) had FAM. ; however, of 90 patients with normal BMI, 10 (11.1%) had FAM. These data suggest that high BMI is associated with an active histopathological pattern of FAM reflecting estrogenic stimulation. (Bhettani et al., 2019). Another study conducted by Okoth C et al. in 2013 at the Saharan Africa Hospital conclude that BMI is directly related to benign breast tumors. In this study, 195 women with benign breast lumps were included. Benign proliferative breast tumors were noted in 35 patients (18%). Benign proliferative breast tumors with atypia were noted in 11 (5.6%) patients with mean age and BMIs of 28.4 years and 23.26 kg/m. The most common lesion was fibroadenoma in 111 patients (57%). The results showed comparable things, therefore it was concluded that increased BMI was a significant risk factor for fibroadenoma formation (Okoth C et al., 2013). The 2016 Non-Communicable Diseases Research (PTM) stated that 53.7% of the people had never done a Breast Self-Examination (BSE) and 95.6% of the community had never done a Clinical Breast Examination (SADANIS). The Indonesian Ministry of Health urges every woman to do BSE and SADANIS periodically with the aim of finding lumps and abnormal signs in the breast as early as possible so that action can be taken as soon as possible (P2PTM Ministry of Health RI, 2019). Fibroadenomas form well-defined (discrete) masses, 1 to 10 cm in diameter and solid in consistency. The cross section shows an even white-brown color, appears to be patterned by small, softer pinkish-yellow patches representing the glandular area (Kumar, Abbas, Aster and Robbins, 2012). The specific cause of FAM is still unknown, but there are many factors that are thought to have an influence on the high incidence of FAM, these factors include: age, lactation period, obesity, contraceptive use, genetics or there is a history of family members with breast cancer (Alini, 2018) . Diagnosis of FAM can be enforced through several stages, namely history taking, physical examination, and imaging tests. If the lump can be felt (palpable), the doctor will recommend certain tests or procedures, depending on the characteristics of the lump. The procedure for removing a fibroadenoma is through a lumpectomy surgery or an excisional biopsy. In this procedure, a surgeon removes breast tissue and sends it to an anatomical pathology laboratory for confirmation of the diagnosis (Litin, Sanjeev Nanda and Mayo Clinic, 2018). A preliminary survey conducted by researchers at the Anatomical Pathology Laboratory of Pasar Minggu Hospital in mid-2021, obtained secondary data from the medical records of patients at Pasar Minggu Hospital for the period July 1, 2019 – December 31, regarding the number of samples for various types of benign breast tumors. There were 46 samples for fibrocystic, 82 samples for FAM and 14 samples for mastitis. Researchers also obtained 37 samples for breast tumors with possible malignancy. FAM patients occupy the highest number in the benign breast tumor category, namely 82 samples during the period July 1, 2019-December 31 (Secondary Data, 2021).

2. Material And Methods

This type of research is observational analytic with a cross sectional design using secondary data from medical records of patients who have met the restriction criteria. The study population was all patients with benign breast tumors who were treated at Pasar Minggu Hospital during the study period as many as 144 patients. The study sample was 82 patients diagnosed with FAM. The sampling technique used was the total population sampling method. Bivariate data analysis was carried out with chi square

3. Result

Relationship between Age and Size of FAM

Table 1. Age Relationship to FAM Size of Pasar Minggu Hospital Patients

Age	FAM size						Total		P-value
	<2 cm		2-5 cm		>5 cm				
	n	%	n	%	n	%	n	%	
16-30 year	12	18,2	49	74,2	5	7,6	66	100	
31-45 year	1	8,3	10	83,3	1	8,3	12	100	0,456
≥ 46 year	2	50	2	50	0	0	4	100	
Total	15	18,3	61	74,4	6	7,3	82	100	

The results of statistical tests with chi square obtained p-value = 0.456 which means that there is no significant relationship between the age variable and the size of FAM in FAM patients at Pasar Minggu Hospital 2018-2019

Relationship between Age and Number of FAM

Table 2. Age Relationship to Number of FAM Patients at Pasar Minggu Hospital

Age	Number of FAM				Total		P-value
	1 Tumor		>1 Tumor				
	n	%	n	%	n	%	
16-30 year	44	66,7	22	33,3	66	100	
31-45 year	9	75	3	25	12	100	0,894
≥ 46 year	3	75	1	25	4	100	
Total	56	68,3	26	31,7	82	100	

The results of statistical tests with chi square obtained p-value = 0.894 which means that there is no significant relationship between the age variable and the number of FAM in FAM patients at Pasar Minggu Hospital.

The Relationship of Obesity to the Size of FAM

Table 3. The Relationship of Obesity to the FAM Size of Patients at Pasar Minggu Hospital

Body Mass Index (BMI)	FAM size						Total		P-value
	<2 cm		2-5 cm		>5 cm				
	n	%	n	%	n	%	n	%	
Low BMI	6	17,1	28	80	1	2,9	35	100	
Normal BMI	4	36,4	6	54,5	1	9,1	11	100	
High BMI	5	13,9	27	75	4	11,1	36	100	0,267
Total	15	18,3	61	74,4	6	7,3	82	100	

The results of statistical tests with chi square obtained p-value = 0.267 which means that there is no significant relationship between the obesity variable and the size of FAM in FAM patients at Pasar Minggu Hospital

Relationship between Obesity and the Number of FAM

Table 4. The Relationship of Obesity to the Number of FAM Patients at Pasar Minggu Hospital

Body Mass Index (BMI)	Number of FAM				Total		P-value
	1 Tumor		>1 Tumor				
	n	%	n	%	n	%	
Low BMI	24	68,6	11	31,4	35	100	
Normal BMI	8	72,7	3	27,3	11	100	
High BMI	24	66,7	12	33,3	36	100	0,930
Total	56	68,3	26	31,7	82	100	

The results of statistical tests with chi square obtained p-value = 0.910, which means that there is no significant relationship between the obesity variable and the number of FAM in FAM patients at Pasar Minggu Hospital.

Relationship between Obesity and FAM

Table 5. Relationship of Obesity to Number of FAM Patients at Pasar Minggu Hospital

Body Mass Index (BMI)	Patiens with FAM		Total Number of Patient with Breast Tumor	%	Odds Ratio (OR)	CI (95%)	P-value
	Yes	No					
Low BMI	35	26	61	42,9	0,955	0,470-1,939	0,899
Normal BMI	11	6	17	12	0,701	0,231-2,129	0,531
High BMI	36	28	64	45,1	1,426	0,470-4,329	0,531

The results of statistical tests with chi square obtained p-value> 0.05 which means that there is no significant relationship between the obesity variable and the incidence of FAM in Pasar Minggu Hospital patients. Risk estimation and statistical analysis of the overall p>0.05 so it can be concluded that there is no significant relationship between the obesity variable and the incidence of FAM. FAM patients are dominated by high BMI with the parameter of strength of relationship used is OR, which is 1.426 with 95% CI 0.470-4.329. That is, patients with high BMI, 1,426 times more at risk of developing FAM. High BMI appears to be a substantial risk factor for the development of FAM, especially in young adolescent women.

4. Discussion

Relationship of Patient Age to Size of FAM

The results of statistical tests with chi square obtained p-value = 0.456, which means that there is no significant relationship between the age variable and the size of the FAM in FAM patients at Pasar Minggu Hospital. Based on the description above, according to the researchers, age is not a significant risk factor for the size of FAM lesions in the patients sampled in this study because FAM has a diameter that varies from 1-10 cm, usually less than 3 cm in diameter but can grow to bigger size. In some patients, fibroadenomas may express both estrogen and progesterone receptors. These hormones stimulate fibroadenoma through a hormone receptor mechanism that causes excessive proliferation of epithelial and stromal cells, patients usually experience atrophy during menopause. Some fibroadenomas can express the epidermal growth factor receptor (EGF).

The Relationship between Patient Age and the Number of FAM

The results of statistical tests with chi square obtained p-value = 0.894, which means that there is no significant relationship between the age variable and the number of FAM in FAM patients at Pasar Minggu Hospital. Based on the description above, according to the researchers, age is not a significant risk factor for the number of FAM in the patients sampled in this study because FAM often appears as a mass that is painless, firm, mobile, and slow growing, usually solitary, can be multiple and can be multiple. bilateral, usually less than 3 cm in diameter but can grow to a large size. More than 70% of fibroadenomas are single masses.

The Relationship of Obesity to the Size of FAM

The results of statistical tests with chi square obtained p-value = 0.267, which means that there is no significant relationship between the obesity variable and the size of FAM in FAM patients at Pasar Minggu Hospital. Based on the description above, according to the researchers obesity is not a significant risk factor for the size of FAM in the patients sampled in this study because the relationship between obesity can be seen from the high morbidity and mortality rates, which may be influenced by diet and type of food ingredients. which are eaten such as baked goods, red meat, chicken, fast food, fatty foods, processed foods and alcohol. Benign breast tumors are abnormal growths of breast tissue that do not spread. The biggest risk factors that cause breast tumors are environmental and lifestyle factors including diet, smoking and alcohol consumption. Diet is an eating habit that can affect a person's nutritional state, because the quality and quantity of food consumed will affect a person's health.

The Relationship of Patient Obesity to the Number of FAM

The results of statistical tests with chi square obtained p-value = 0.910, which means that there is no significant relationship between the obesity variable and the number of FAM in FAM patients at Pasar Minggu Hospital. . Based on the description above, according to researchers obesity is not a significant risk factor for the number of FAM in the patients sampled in this study because the wrong diet can cause various diseases, one of which is breast tumors. Research in Japan, eating patterns are divided into three categories, namely the western diet, healthy eating patterns and traditional Japanese eating patterns. The results showed that a high-energy western diet, such as frequent consumption of red meat, salty foods, and sweet foods, increased the risk of breast cancer in women who had a high risk of breast cancer. unhealthy eating patterns such

as frequent consumption of meat, processed or preserved meat, sweet foods and foods high in fat can increase the risk of breast cancer. The risk of developing breast tumors is modifiable and irreversible. The risk factors for breast tumor that cannot be changed are age, genetic mutations, reproductive factors, genetic factors, and hormonal factors, while the modifiable risk factors are lifestyle, physical activity, and obesity.

The Relationship of Obesity to Patients FAM

The results of statistical tests with chi square obtained p-value> 0.05 which means that there is no significant relationship between the obesity variable and the incidence of FAM in Pasar Minggu Hospital patients. Risk estimation and statistical analysis of the overall p>0.05 so that it can be concluded that there is no significant relationship between the obesity variable and the incidence of FAM. FAM patients are dominated by high BMI with the parameter of strength of relationship used is OR, which is 1.426 with 95% CI 0.470-4.329. This means that patients with a high BMI are 1,426 times more likely to develop FAM. Based on the description above, then m According to researchers, high BMI appears to be a substantial risk factor for the development of FAM, especially in young adolescent women.

4. Conclusion

Based on the results of research and discussion, it can be concluded:

1. There is no relationship between age and obesity with the histopathological profile of FAM patients at Pasar Minggu Hospital for the period 1 July 2018-31 December 2019

2. The age of FAM patients who are treated at Pasar Minggu Hospital is mostly patients aged 16-30 years

3. Body Mass Index (BMI) of FAM patients treated at Pasar Minggu Hospital are mostly patients with obesity classification

4. Histopathological profile of FAM patients who were treated at Pasar Minggu Hospital related to the size of the lesion, the most were patients with FAM lesions measuring 2-5 cm and the highest number of tumors were patients with the number of lesions 1

5. There is no significant relationship between age and size and increase in the number of lesions. There was no significant relationship between obesity and the size and increase in the number of lesions.

5. SUGGESTION

1. For Patients

    Respondents are expected to increase their knowledge of FAM including early detection and prevention of various risk factors that can be obtained from print and electronic media and counseling at the nearest health service center. Practicing breast self-examination (BSE) and paying attention to the BMI value to keep it low (<25) especially for women aged 15-35 years which is the age most vulnerable to the incidence of FAM.

2. For Further Researchers

    Researchers are expected to be able to continue the research by adding independent variables (relationship between parity, contraceptive history and genetics with the incidence of FAM) which will be studied with the same title and a larger number of samples in a wider population to better explain the correlation of age and obesity with the incidence of FAM. .

3. For Pasar Minggu Hospital

a. The medical record section of Pasar Minggu Hospital is expected to be able to further improve the completeness of the patient's medical record data, such as minimizing data loss and including contraceptive history, parity, and family history in the medical record data.

b. The patient's medical record data for outpatient and inpatient data should be made into one file, so that it can be used as reference material in the management of FAM sufferers.

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