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Oral Contraception Use in Benign Breast Tumor Patients in Dr. Soetomo General Academic Hospital

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ABSTRACT

The growth of breast tumors is influenced by estrogen and progesterone hormones. One source of this hormone is hormonal contraception, including oral contraception which still in demand by Indonesian women. This study wants to identify oral contraception use in patients with benign breast tumors. This used descriptive study with a retrospective cross-sectional design. Samples were taken using the total sampling method in patients with benign breast tumors according to ICD 10 D-24 which was confirmed by FNAB examination at the POSA Dr. Soetomo General Academic Hospital between 2015-2017. Fifty three case of benign breast tumor were found with dominant characteristics at the age of group 40-49 years old (47.2%), had a breastfeeding history (50.9%), multiparous woman(64.2%), mean of menarche age at 13.28 years old and fertile periode women (83.0%). The most common type of benign tumors found were fibrocystic change. Patients who used oral contraceptives were 24.5% with an average length of use for 8 years 2 months, while another 75.5% used non-hormonal contraception or did not use any contraception. So the conclusion is majority of patients with benign breast tumors do not use oral contraception.

Keywords: benign breast tumor; oral contraception; estrogen

INTRODUCTION

Benign breast tumor is a lesion that still often found among women in the world, 9 out of 10 lumps found in a woman's breasts are benign(1). Women breast tumors are the most common tumors found in Indonesia. Badan Registrasi Kanker(2) found 7746 cases were a primary tumor of breast. In a study conducted by Ugiagbe and Olu(3), it was mentioned that the type of benign breast tumor that was frequently encountered in his study involving 1864 cases was fibroadenoma and fibrocystic changes as much as 43.1% and 23.8%, respectively. Lumps in the breast can be classified histologically into proliferative and non-proliferative lesions. Proliferative lesions include fibroadenomas, intraductal papillomas, and benign phyllodes tumors. Fibrocystic changes can be either proliferative or non-proliferative, but 70% of cases are found as non-proliferative lesions(4). In general, benign tumors are not dangerous. Even so, we have to be aware of this because benign breast tumor is one of the triggering factors for breast cancer (5).

The etiology of benign breast tumors remains unclear. However, changes in a breast are closely related to hormonal changes that occur in a woman's body(6). Hormones that play a role in the growth of breasts are estrogen and progesterone(7). Both hormones can be found in hormonal contraception such as oral contraception. It is still controversial whether oral contraceptives can increase the risk of benign breast tumors or not. Sihombing(8) said that contraceptive pill users have a 3.63 times risk greater for breast tumors compared to non-contraceptive pill users as well as Yu(9) said that oral contraceptive use causes the increased risk for fibroadenoma. While Carbonaro(10) said there is no significant difference between users of oral contraceptives and non-users of oral contraceptives for the incidence of benign breast disease. This is an important situation to study because oral contraception is a method that mostly used by Indonesian women as much as 2,261,480 women in 2013(11). Despite this fact, we want to know the description of oral contraception use in benign breast tumor patients in Dr. Soetomo General Academic Hospital Surabaya.

METHODS

This used a retrospective cross-sectional study on female patients with benign breast tumors according to ICD 10 D-24 at the POSA (One-Stop Oncology Polyclinic) Dr. Soetomo General Academic Hospital Surabaya. We included patients with complete medical data and FNAB examination reports and excluded patients using another hormonal contraception besides oral contraception. Data obtained from hospital medical record. We recorded age, breastfeeding history, parity status, menarche age, menopause status, benign breast tumor type, oral contraceptive, and duration of the oral contraceptive. Data that we had collected then presented on descriptive method. The ethical clearance number got from Research and Development Department of Dr. Soetomo General Academic Hospital Surabaya (No.0627/KEPK/1x/2018).

RESULTS

The number of benign breast tumor patients with FNAB examination results and complete data during the 2015-2017 period were 53 patients.

Characteristics of Benign Breast Tumor Patients

Table 1. Characteristics of benign breast tumor patients

Variables	n (%)
Age (years)	
• <20	6 (11.3)
• 20-29	8 (15.1)
• 30-39	6 (11.3)
• 40-49	25 (47.2)
• ≥50	8 (15.1)
Breastfeeding history	
• Yes	27 (50.9)
• No	18 (34.0)
Parity status	
• Nulliparous	16 (30.2)
• Multiparous	34 (64.2)
Menarche age (years)	*13.28
Menopause status	
• Yes	6 (11.3)
• No	44 (83.0)

*menarche age mean

Patient characteristics can be seen in table 1. The dominant age was group 40-49 years old as much as 47.2% with mean 38.75 and median 42. Other dominant characteristics included patients with a history of breastfeeding as much as 50.9%, multiparous patients as much as 64.2%, the mean age of menarche is 13.28 years old, and fertile periods women are 83.0%.

Type of Benign Breast Tumor

Table 2. Type of Benign Breast Tumor

Benign breast tumor type	n (%)
Fibrocystic change	31 (58.5)
Fibroadenoma	17 (32.1)
Benign phyllodes tumor	1 (1.9)
Intraductal papilloma	1 (1.9)
Others	3 (5.7)

The most common type of benign breast tumor was 58.5% fibrocystic changes, followed by 32.1% fibroadenoma.

Oral Contraception Usage

Table 3. Oral contraception usage

Variables	n(%)
Oral contraceptive	
• Yes	13 (24.5)
• No	40 (75.5)
Duration of oral contraceptive use (years)	
• <1	1 (7.7)
• 1 – 5	3 (23.1)
• 6 – 10	1 (7.7)
• >10	3 (23.1)

Data on the results of benign breast tumor patients shows that the majority of patients who are positive suffering from benign breast tumors did not use oral contraceptives, which was as much as 75.5%. While the rest of patients used oral contraceptives with mean and median duration of use is 8.2 and 7.5 respectively.

DISCUSSION

Benign breast lesions often occur in young women with a peak at the age of the third decade[3]. However, it is different from the results found in this study, which states that the 40-49 year age group is the dominant one. This situation is closely related to table 2 which show the dominant type of benign breast tumor is the fibrocystic change. Lakhani's research[12]states that the 30-50 years age group is susceptible to the growth of cyst, where the cyst is an example of fibrocystic change. Other studies conducted in Africa also showed the same results. The study said that fibrocystic changes were still often found at the age of more than 30 years to 50 years old [3].

History of breastfeeding and parity are said to be influential in reducing the risk of developing benign breast tumors. The existing theory states that breastfeeding history is associated with a reduced menstrual cycle which means estrogen exposure during her life is also reduced so that breast cells whose growth is influenced by estrogen do not experience proliferation[13]. While other theories state that a history of parity can inhibit tumor growth associated with high tumor-associated antigens (TAA) in the breast and placenta in pregnant women. Tumor cells are destroyed by T cells that recognize the antigen. These antigen-induced T cells can last for decades, so women with a history of parity are better protected from breast tumors[14]. However, different conditions were found in this study, more benign breast tumor patients have a history of parity and breastfeeding. This situation is thought to be influenced by the epidemiology of marital age in Indonesia. Judging from the median age of Indonesian married women who are 21.8 years of age in 2017, most of the study population exceeds the median age of marriage[15]. So most of them have a history of parity and breastfeeding.

The mean age of menarche patients is 13.28 years and the majority of patients were in the fertile periods. This condition is in line with existing theories. Both are closely related to exposure to the hormones estrogen and progesterone which affect breast proliferation, which can increase the risk of breast tumors[16].

This study showed the majority of patients suffering from benign breast tumors do not use oral contraceptives, which is as much as 75.5%. This is in line with Carbonaro[10] that said there is no significant difference between users of oral contraceptives and non-users of oral contraceptives for the incidence of benign breast disease. But this study differs from Sihombing's study[8] which states that oral contraceptives increase the risk of breast tumors and Yu's study[9] in which oral contraceptives increase the risk of fibroadenoma. Another study conducted by Estevão, Nazário, and Baracat[17]said that oral contraceptives have a protective factor against fibroadenoma. Armstrong[18] also said oral contraceptives users have a lower risk of benign breast disease. The mechanism of action of this protective factor from oral contraceptives is unclear, but there are several theories believed to have resulted in this situation. Estrogen hormone used in the pill is ethinyloestradiol while the progesterone hormone is levonorgestrel or norethisterone [19]. The progesterone will send negative feedback to the hypothalamus which results in decreased Leutinizing Hormones (LH) and Follicle Stimulating Hormone (FSH). This will cause the follicles that produce estrogen do not develop. Estrogen is also said to have a negative feedback effect on the anterior pituitary but not as much as progesterone [20]. Therefore, there will be inhibition of the breast cell proliferation that normally occurs in the first half of an ovulatory menstrual cycle.

Another theory states that breast growth in fibroadenomas is mainly influenced by the mechanism of the paracrine hormone. Estevão, Nazário, and Baracat[17] stated that breast epithelium can produce growth factors that act on fibroblasts to stimulate DNA synthesis and induce their growth. However, this situation is balance because the epithelium also produces a stromal inhibitory factor. Ethinyloestradiol which is an ingredient in the

pill has the ability to stimulate the epithelium to produce more inhibitory factors so that breast growth can be suppressed, this was proven in his study where fibroadenoma size was reduced in the use of combined oral contraceptives evaluated using ultrasound [17].

CONCLUSION

The majority of patients with benign breast tumors do not use oral contraceptives. While the patient's characteristics are dominated by the 40-49 years old age group, had a breastfeeding history, multiparous, and fertile periode women.

This study also has some limitations because the data is taken from a person's medical records so that in some medical records no data was found. This evaluation can be used to conduct further research so that the data obtained is more complete.

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PAGE 2

PAGE 3

PAGE 4