

THE RELATIONSHIP BETWEEN HORMONAL CONTRACEPTIVE USE AND THE RISK OF BREAST CANCER AMONG WOMEN IN KEDIRI, EAST JAVA

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ABSTRACT

Background: In 2020, there were 2.3 million women diagnosed with breast cancer and 685,000 deaths globally. An analysis of data from more than 150,000 women who participated in previous 54 epidemiologic studies showed that, overall, women who had ever used oral contraceptives had a slight (7%) increase in the relative risk of breast cancer compared with women who had never used oral contraceptives. This study aimed to determine the relationship between hormonal contraceptive use and the risk of breast cancer among women.

Subjects and Method: This was a cross-sectional study conducted in Gambiran Hospital, Kediri, East Java, in June 2021. A total of 38 hormonal contraceptive users was selected by total sampling. The dependent variable was breast cancer. The independent variable was hormonal contraceptive use. The data were collected by questionnaire and analyzed using odds ratio and chi-square.

Results: Hormonal contraceptive use was associated with an increased risk of breast cancer, but it was statistically not significant (OR= 1.37; 95% CI= 0.62 to 3.32; p= 0.428).

Conclusion: Hormonal contraceptive is associated with breast cancer, but it is statistically not significant.

Keywords: hormonal contraceptive, risk factor, breast cancer, woman

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BACKGROUND

Breast cancer is cancer that forms in breast tissue. Breast cancer occurs when cells in the tissue in the breast grow uncontrollably and take over the healthy breast tissue. Deaths from breast cancer continue to increase in all countries, both countries developed, as well as developing countries. Breast cancer ranks first as a disease with the highest percentage of new cases (43.3%) and the highest cause of death in women.

Globocan data states that in 2018 there were 18.1 million new cases with a death rate of 9.6 million deaths, where

1 in 5 men and 1 in 6 women in the world experienced a death. cancer dian. The data also states that 1 in 8 men and 1 in 11 women die of cancer.

The incidence of cancer in Indonesia (136.2/100,000 population) ranks 8th in Southeast Asia, while in Asia it is 23rd. The highest incidence rate in Indonesia for men is lung cancer (at 19.4 per 100,000 population, with the average death rate is 10.9 per 100,000 population). Meanwhile, the highest incidence rate for women is breast cancer (42.1 per 100,000 population with an average death rate of 17 per 100,000 population).

Based on Riskesdas data, the prevalence of tumor/cancer in Indonesia shows an increase from 1.4 per 1,000 population in 2013 to 1.79 per 1,000 population in 2018. Based on data from Info Datin (Center for Data and Information of the Ministry of Health, Indonesia defense) on the Burden of Cancer in Indonesia, stated that the highest prevalence was in East Java 2.1 per 1,000 population.

Many things are risk factors for breast cancer, including a long distance between menarche and menopause, a family with a history of breast cancer, obesity and a high-fat diet, productive age and above, first pregnancy at an early age. old and hormones.

Hormones are thought to increase the risk of breast cancer more as a promoter than an initiator. The hormone in question is exposure to sex hormones such as excessive estrogen and progesterone that interferes with physiological processes in the body, including mammary tissue.

For the prevention and control of cancer in Indonesia, especially the two most common types of cancer in Indonesia, namely breast and cervical cancer, the government has made various efforts, including early detection of breast cancer and cervical cancer in women aged 30-50 years with using the Clinical Breast Examination (SADANIS) method for the breast, and Visual Inspection with Acetic Acid (IVA) for the cervix

SUBJECTS AND METHOD

1. Study Design

This was cross-sectional study, conducted at Gambiran Hospital, Kediri, East Java, in June 2021.

2. Population and Sample

The population in this study were breast cancer patients who use hormonal contraception. A total of 38 women with breast cancer were selected totally.

3. Study Variables

The dependent variable was breast cancer. The independent variable was hormonal contraceptive use.

4. Operational Definition of Variables

Hormonal contraceptive is a woman who uses birth control containing hormones to delay or make the distance between children according to the desired period of time. The indicators in this variable are: 1) hormonal family planning users; 2) not users of hormonal birth control. The scale used in this variable is the nominal scale.

Breast cancer incidence are a female patient or patient with breast cancer. The indicators for this variable are: 1) the occurrence of breast cancer; 2) no breast cancer. The scale used in this variable is the nominal scale.

5. Instruments

The data is in the form of primary and secondary data. Primary data were obtained using questionnaire filled out by research subjects. Secondary data were obtained from Gambiran Hospital, that is the number of women with breast cancer.

6. Data Analysis

Univariate analysis was carried out to see frequency distribution of the research subjects. While bivariate analysis was carried out to see determine the relationship between hormonal contraceptive use and the risk of breast cancer among women.

RESULTS

1. Univariate analysis

Table 1 showed that most of the subjects were aged 20-35 years (73.6%), and experienced menarche at the age of >15 years (68.4%), all

subjects were married (100%), and gave birth to their first child at an average age of 20-35 years (73.6%), and using hormonal family planning for >5 years (57.8%).

Table 1. Univariate analysis (dichotomous data)

Variables	Categories	Frequency (n)	Percentage (%)
Age	<20 years	5	13.1
	20-35 years	28	73.6
	>35 years	5	13.1
Menarche	10-15 years	12	31.5
	>15 years	26	68.4
Marital status	Married	38	100
	Unmarried	0	0
Age of first birth	<20 years	3	7.8
	20-35 years	28	73.6
	>35 years	7	18.4
Length of use hormonal contraceptive	<5 years	16	42.1
	>5 years	22	57.8

2. Bivariate analysis

The results of the chi-square test showed a relationship between the use of hormonal contraception and the risk of breast cancer in women.

Table 2 showed that women using hormonal family planning had a 1.371

times higher risk of developing breast cancer compared to women not using hormonal family planning, but it was not statistically significant (OR= 1.37; 95% CI= 0.62 to 3.32; p= 0.428).

Table 2. The relationship between the use of hormonal contraception and the risk of breast cancer in women.

Variables	OR	95% CI		p
		Lower Limit	Upper Limit	
Hormonal contraceptive	1.37	0.62	3.32	0.428

DISCUSSION

In this study, most breast cancers were found in productive age, one of which had a very significant effect, one of which was age, which was 20-35 years. Age is closely related to breast cancer. In a study conducted by Swart in the Journal of Breast Cancer Risk Factors at RSUD DR. Soedarso Pontianak,

Faculty of Medicine, Tanjungpura University, Pontianak by Hendri Fitoni, showed that age has a relative risk of >4 times in causing breast cancer and the risk of breast cancer increases with age.

An earlier age of the first menstruation is related to the duration of exposure to the hormone's estrogen

and progesterone in women which affects the process of tissue proliferation including breast tissue.

Another thing that also influences is marital status. Fitoni (2012), stated that marital status does not directly play a role in breast cancer risk. Women who are married and have children and breastfeed their children have a lower risk of developing breast cancer. Women who have children and breastfeed will experience perfect differentiation of their breasts, thereby reducing the risk of breast cancer.

Based on the data obtained in this study, most of the respondents gave birth to their first child between the ages of 20-35 years. In another study, women who gave birth to their first child over the age of 30 had twice the risk of developing breast cancer compared to women who gave birth to their first child at the age of under 30. Another study conducted by Briit stated that women who gave birth to their first child under the age of 20 had a much lower risk of developing breast cancer than women who did not give birth. However, it is not known for certain the relationship between parity and the incidence of breast cancer.

Another study stated that the age of first giving birth above 30 years is a risk of breast cancer only in the type of breast cancer that has estrogen receptors and progesterone receptors on its cancer cells, which are commonly written as ER (+) and PR (+). While the type of cancer that does not have estrogen receptors or ER (-), giving birth to their first child at the age of over 30 years does not increase the risk of breast cancer.

In addition, most hormonal contraceptives contain estrogen and synthetic gestagens, but there are also hormonal contraceptives that contain only gestagens. During breast growth, estrogen is the most important hormone in existence. However, it should be noted that too much estrogen is not always good. Too much estrogen will overload the body and turn off the function of the estrogen receptor. Estrogen can cause cancer in 2 ways. The former, acts as a mitogen, meaning that it stimulates breast tissue to increase cell division (mitosis). This sometimes results in cancer due to cell division errors (mutations). Second, certain estrogen metabolisms also act as carcinogens or genotoxins, by damaging DNA directly, causing cancer cells to form. The effects of estrogen were included in the model. The results show that the presence of extra estrogen increases the risk of developing breast cancer

AUTHOR CONTRIBUTION

Nurita Nilasari Bunga Kharisma Arifiana Putri, Eko Sri Wulaningtyas as the main researcher who designs topics, conducts research, analyzes data, and conducts publications.

CONFLICT OF INTEREST

There is no conflict of interest.

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