DOI Number: 10.5958/0976-5506.2019.02298.8

The Correlation of Duration of Hormonal Contraception with the Case of Breast Cancer at RSUD Jombang

Sestu Retno Dwi Andayani[1], Rizki Aprillia[2], Mamik Ratnawati[1]

[1]Lecturer, [2]Student, Nursing Study Program, Stikes Pemkab Jombang, Jombang, Indonesia

ABSTRACT

Breast cancer is the most deadly case for women. One of the causes is duration of hormonal contraception use. The purpose is to determine correlation of duration hormonal contraception use with breast cancer cases. Study design used analytic correlation with a cross-sectional method. The population is all users of hormonal contraception at RSUD Jombang (396 people). The sample size used purposive sampling technique with 364 respondents. Independent variable is duration of hormonal contraception use and dependent variable is breast cancer cases. Furthermore, analysis test used chi-square with $\alpha = 0.05$. The result indicated that 60 (48.1%) from 125 respondents using hormonal contraception >5 years had got breast cancer. However, all of 239 respondents (65.8%) t using hormonal contraception <5 years did not get breast cancer. The result of chi-square is $p = 0.000 < 0.005$, which means strong correlation of duration hormonal contraception use with breast cancer cases. The conclusion is hormonal contraceptive use >5 years will increase the risk of breast cancer cases.

Keywords: *hormonal contraception, breast cancer.*

Introduction

Breast cancer is a type of cancer which often occurs in women in Indonesia. The risk factors for breast cancer are, age> 50 years, alcohol consumption, obesity, giving birth at the age of more than 35 years, never giving birth, not breastfeeding, menopause at age> 50 years, early menarche, radiation exposure, and the long term use of hormonal contraception.[1] The hormone is exposure to sex hormones such as estrogen and progesterone in which excessive amount interferes with physiological processes in the body, including mammary tissue.[2]

Based on the Hospital Information System (SIRS) in 2014, the number of outpatients and inpatients (12.8%) had breast cancer as many as 12,014 people (28.7%) and cervical cancer with total 5,349 people.[3] Breast cancer had a contribution of 30% and is the most dominant in Indonesia, outstripping cervical cancer or cervical cancer which contributes24%.[4] The mortality rate from breast cancer is high in developed countries and it is still low in developing countries, including Indonesia.[3] Based on early detection of breast cancer in Indonesia as of 2016, the number of breast cancer patients was 4,030 people with those surviving cervical cancer numbering 1,739 people.[5] Based on breast cancer data in Jombang Hospital in 2017 there were 31 people with breast cancer.

Many factors can cause breast cancer, one of them is the use of hormonal contraception. It is a part of a program known as family planning which is an attempt to delay pregnancy or determine the number of or time between pregnancy using contraception.[6] According to the World Health Organization (WHO), nearly 380 million couples used family planning and 65-75 million of them used hormonal contraception such as oral contraceptives, injections and implants.[7] Data of the National Population and Family Planning Board showed that the choice of contraception was the most interested or chosen by new and active family planning users, namely pills and injections.[1] Data from the national population and family planning body (BKKBN) in 2013 received 8,500,247 couples of reproductive age who

Corresponding Author:
Sestu Retno
Lecturer Nursing Study Program,
Stikes Pemkab Jombang, Jombang, Indonesia
Email: sestu.retno@yahoo.com

were new family planning participants, with details of injectable contraceptive use 4,128,115 participants (48.56%), pills as many as 2,261,480 participants (2, 60%), implants were 784,215 participants (9.23%), condoms were 517,638 participants (6.09), intrauterine contraception 658,632 participants (7.75%), MOW (female surgery method) 128,793 participants (1.52%), MOP (male surgery method) 21,37 participants (0.25%). From the above data, we can see that the most widely used is hormonal contraceptive methods.[8] In addition, data from the health profile of Jombang district, showed that the type of contraception used by acceptors is injection KB, as much as 61.9%, followed by pills and implants.[7] Previous studies had shown that there was a correlation between the use of hormonal contraception and the incidence of breast cancer.[9]

Some studies suggest that the use of hormonal contraception over a long period of time or ≥5 years can increase breast cancer risk. Women who use hormonal birth control have a risk of 2,990 times more likelihood of getting breast cancer.[10] Other studies suggest that hormonal contraceptive use causes increased exposure to estrogen and progesterone hormones which can cause cell proliferation in the breast glands and inhibition of the apoptotic process.[11] This, hormonal contrast was one of the risk factors for breast cancer.

Prevention efforts were a healthy lifestyle, counseling, and also early detection with the BSE system (check your own breasts) to see whether there were lumps or other changes that were a sign of breast cancer and required medical attention.[12] Based on the above background, the researchers are interested in conducting research related to the use of hormonal contraception with the occurrence of breast cancer in Jombang General Hospital.

Method

Study Design, Setting, and Sampling: The design of this study was cross-sectional analytic. Population was all hormonal contraceptive participants who used injections, pills and implants in the Jombang Hospital, as many as 396 people. The sample size, as many as 364, used purposive sampling technique. The independent variable was duration of hormonal contraceptive use and the dependent variable was breast cancer cases. The place and time of the study were the Jombang District Hospital, 9-15 May, 2018.

The study used observations and used the chi-square statistical test

Results

Long usage of hormonal contraception

Table 1: Frequency distribution of respondents based on duration of hormonal contraceptive use at the Jombang Hospital Polyclinic,19-30 May, 2018

No.	The duration of family planning	Frequency	Percentage (%)
1.	> 5 years	125	34.2
2.	< 5 years	239	65.8
	Total	364	100.0

Source: 2018 primary data

Table 1 shows that the majority of respondents (65.8%) used <5 years hormonal contraception, as many as 27 respondents.

Table 2: Characteristics of respondents based on the incidence of breast cancer

No.	Incidence of breast cancer	Frequency	Percentage (%)
1.	Yes	60	16.5
2.	No	304	83.5
	Total	364	100.0

Source: 2018 primary data

Table 2 shows that almost all respondents (83.5%) did not have breast cancer, as many as 364 respondents.

Correlation between the duration of hormonal contraceptive use and the incidence of breast cancer

Table 3: Cross=tabulation of the correlation between the duration of hormonal contraceptive use and the incidence of breast cancer in the Gynecology Department of Jombang Hospital on 19-30May, 2018

Hormonal Usage	Breast cancer history				Total	
	Yes		No			
	∑	%	∑	%	∑	%
> 5 Years	60	48.1	65	51.9	125	100
< 5 Years	0	0	239	100	239	100

Source : primary data 2018

Based on Table 3, 12 of the 52 respondents who used <5 years of Hormonal KB all 100% had no breast cancer.

Discussion

Long usage of hormonal contraception: Table 1 shows that most (65.8%) of the older respondents use hormonal contraception < 5 years, as many as 27 people. Previous theory mentioned that nearly 70% of acceptors used hormonal contraception methods.[13] The duration of use of hormonal contraception depended on the type of contraception which was used every day for many years, but there were also many side effects complained about by family planning acceptors because they uses hormonal contraception methods.

According to researchers, some respondents used hormonal contraception <5 years because the contraception which was chosen was inappropriate or unsuitable, so they replaced it with other hormonal contraceptives for a period of <5 years.

Based on the results of the study, it was shown that almost all (77.2%) of the respondents obtained information, as many as 66 people. The delivery of information or messages about family planning programs can use radio, TV, and promotion with the aim of problem solving within the community to improve or achieve family planning programs.[14] Information on the selection of appropriate contraception types and good time periods can be obtained by consulting a doctor or health worker.

According to the researchers, the information obtained by respondents about KB programs and hormonal contraceptives was obtained from many various sources. Before starting a plan to use hormonal contraception, the acceptor candidates will be given information on the types of side effects and how to overcome them.

Based on the results of the study, it showed that the majority (53.2%) of respondents used injectable contraception type, as many as 42 people. This can be due to the benefits of using hormonal contraception, which can be used by breastfeeding mothers, do not need to be consumed every day or used before sexual intercourse, and help to overcome cramps during menstruation and reduce menstrual blood.[14]

According to injectable contraceptive research, many respondents used these methods because most considered them suitable and effective as they did not require lengthy usage and were not as difficult as other contraception. The use was only 1-3 times a month, whereas contraception pills must be routinely taken every day and the user must understand how to take medication and people who do not know and use other contraceptives, might feel sick and be afraid of the risks of breast cancer incidence.

Breast cancer incidence: Table 2 shows that for almost all respondents, the incidence of breast cancer did not occur, as many as 304 people (83.5%). This supports previous research into causes of breast cancer not only from hormonal contraception, but also age, genetics, pregnancy, radiation, diet and being overweight.[15]

According to research, the occurrence of breast cancer because of hormonal birth control alone cannot be generalized as a cause of breast cancer as breast cancer itself occurs due to factors such as age, occupation, offspring, and not having children as well as hormonal factors. One of the hormonal factors can be obtained by using a long-term hormonal birth control because of the frequent exposure to estrogen and progesterone, which can trigger the growth of breast cancer cells.

Based on the results of the study, it showed that the majority of respondents were aged > 35 years, as many as 50 people (63.3%). Women in their mid-30-40s were at risk of developing breast cancer at that age because this is the most common ages in which the first stages of breast cancer were detected.[15]

According to research, respondents aged > 35 years were more susceptible to breast cancer because at that age a person experiences a decrease in the immune system, so that they are easily exposed to diseases, one of them being breast cancer. Especially if supported by factors that cause breast cancer.

Based on the results of the study, it showed that the majority of respondents did not work, as many as 56 people (70.9). Women who work have a higher risk of breast cancer, especially in women who work at night, because the light at night can suppress the production of melatonin in the brain so that the hormone estrogen increases; melatonin is believed to increase breast cancer cell growth.[14]

According to research, some jobs could be a risk factor for breast cancer, such as work that is directly exposed to chemicals, such as in factories. Women who were often exposed to light at night, such as watching the screen of a cellphone with high light intensity for a long time, could trigger the growth of breast cancer cells.

Based on the results of the study, it showed that all respondents did not experience a family history of cancer, as many as 79 people (100%). Women with offspring or who previously had a family member suffering from breast cancer had a high risk of developing breast cancer. About 5-10% of breast cancers were reduced, meaning the seeds of cancer were a direct result of gene abnormalities (gene mutations) that were lowered from their parents.[3] those who have family members aged 65 years have twice the risk, and, among younger women with breast cancer, the more likely it is the disease is hereditary.[15]

According to the research no history of breast cancer in the family would reduce the risk of breast cancer. Breast cancer could also be avoided with a healthy lifestyle and not choosing jobs that trigger breast cancer. Women could also do an early check-up with a health service if there were one or two family members who had previously had breast cancer as this could help to prevent the spread of cancer and allow prevention as soon as possible.

Based on the results of the study, it showed that the majority of respondents did not experience a weight gain (43 people equal to 54.4%). Women who were overweight after entering menopause at the age of> 35 years had a higher risk of developing breast cancer.[3] Women who are overweight have a higher level of estrogen than they should, because, before menopause, the ovaries and fat tissue both produce estrogen. After menopause, the ovaries stop producing estrogen so that estrogen comes from fat tissue. Having more fat tissue means increasing estrogen levels after menopause, thereby increasing the risk of breast cancer.

According to the research, there was no increase in body weight due to a match with the type of contraception used; those who used hormonal contraception were asked if they experienced weight gain or side effects

The correlation duration of hormonal birth control with breast cancer: The results of the Contingency Coefficient statistical test obtained a significant number with a value of 0.524, which means there was a correlation between the two variables with medium strength and a positive direction.

Previous research stated that the risk factors affecting breast cancer incidence were the age of the respondent, age of menarche, age of menopause, length of breastfeeding, duration of oral contraceptive use, consumption patterns of fatty foods, fibrous food consumption patterns, obesity, dietary patterns, passive smoking and alcohol consumption.[16] Women currently taking oral contraception had a one-fourth greater risk than women who have stopped using it 10 years ago, but the increase in risk is not statistically significant. This supports other studies which state that hormonal contraceptive use causes increased exposure to estrogen and progesterone hormones, which can cause cell proliferation in the breast glands and inhibition of the apoptotic process.[11]

According to the research, hormonal contraception used > 5 years could be trusted as the cause of breast cancer. The incidence of breast cancer itself was usually detected at the age of > 35 years, so that more women who had already been affected by the impact of breast cancer, with awareness for early examination would certainly be able to reduce the factors that cause breast cancer. The use of hormonal contraception could not be used as a reason for breast cancer. Hormones were not only obtained from contraception, but could be obtained from other drugs that contain the hormones estrogen and progesterone. The occurrence of breast cancer could be triggered from the use of hormonal contraception > 5 years and is supported by other factors, including unhealthy lifestyles, rarely exercise, working in places that were often exposed to chemicals, and tobacco. The results of the study showed that there was a correlation between the use of long-term hormonal birth control and the incidence of breast cancer, even though from 239 respondents and there were 364 respondents who used family planning < 5 years, which means they had a lower risk of breast cancer.

Conclusion

This study illustrates that there is a relationship between the duration of use of hormonal contraception and the incidence of breast cancer in Jombang Hospital with a probability value (0.000) and is supported by the results of contingency statistics with a value of 0.524,

which means there is a correlation between two variables with moderate strength and positive direction, where the duration hormonal contraceptive use is directly proportional to the minimum incidence of breast cancer. Further research is expected to develop nursing planning and increase knowledge and early detection of breast cancer.

Ethical Clearance: The ethical approval for this study was granted by The Health Research Ethics Committee High School Science Pemkab Jombang in 2018.

Source of Funding: None

Conflict of Interest: None

REFERENCES

1. Health IM of. Situation and Family Planning Analysis [Internet]. 2014. Available from: file:///C:/Users/Mrs. Siswati/Downloads/infodatin-harganas.pdf
2. Guyton & Hall. Textbook of Medical Physiology. Vol. 12. Jakarta: EGC; 2014.
3. Savitri. Peel Complete Breast Cancer, Cervix and Uterus. Yogyakarta: Pustaka Baru Press; 2015.
4. Department of Health. Basic Health Research. Res Dev Agency [Internet]. 2013; Available from: http://www.depkes.go.id/resources/download/general/Hasil Riskesdas 2013.pdf
5. Profile of the Ministry of Health. Number of Breast Cancer Detection. 2016; Available from: https://e-journal.unair.ac.id/JBE/article/d. 27/02/2018
6. Sulistyawati. Family Planning Services. Jakarta: Salemba Medika; 2014.
7. BKKBN. Report of Government Intitution Performance Accountability: Population and National Family Agency, 2013 Year [Internet]. Jakarta; 2014. Available from: https://www.bkkbn.go.id/po-content/uploads/lakip_bkkbn_2013.pdf
8. Republic of Indonesia Ministry of Health. Family Planning Data in Indonesia. 2015; Available from: https://e-journalunair.ac.id/JBE/article/d. 27/02/2018
9. Office P of JH. KB Data. 2016; Available from: https://dinkes.jombangkab.go.id/profil-kesehatan. 11/06/2017
10. Ditya Ayu Intan Setiowati et al. The Relationship between the Use of Hormonal Family Planning and Breast Cancer Events in the One-Stop Oncology Police Hospital Dr. Soetomo. 2016;10(5):11–7. Available from: https://media.neliti.com/media/publications/66170-ID-hubungan-antara-pemakaian-kb-hormonal-de.pdf
11. Putri Adinie Esca Nissa et al. Hormonal Contraception as a Risk Factor for Breast Cancer in Al-Ihsan Hospital Bandung. 2017;1(22):112–9. Available from: https://media.neliti.com/media/publications/66170-ID-hubungan-antara-pemakaian-kb-hormonal-de.pdf
12. Irianto. Sadari. 2015; Available from: http://e-journal.unair.ac.id/JBE/article/d. 27/02/2018
13. Handayani. Textbook on Family Planning. Yogyakarta: Pustaka Rihama; 2010.
14. Purwoastuti. Prevention and Early Detection of Breast Cancer. Yogyakarta: Kanisius; 2014.
15. Lee. Age Prone to Breast Cancer. 2008; Available from: https://e-journal.unair.ac.id/JBE/article/d. 27/02/2018
16. Iin Yulianti et al. Risk Factors of Breast Cancer (Case Study at Ken Saras Hospital Semarang). 2016;4. Available from: https://media.neliti.com/media/publications/137682-ID-faktor-faktor-risiko-kanker-payudara-stu.pdf