**Analysis of Associated Factors Breast Canser in Women at Pirngadi Hospital Medan in 2020**

**Hayatur Ridha Sari**

Institut Kesehatan Helvetia, Indonesia

Email: hayadalimunthe@gmail.com

\* Correspondence: hayadalimunthe@gmail.com

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| **KEYWORDS** | **ABSTRACT** |
| age parity, age of first menstruation (menarche), family history of breast canser, smoking habits, and contaception  | WHO show breast canser is the most cases in Indonesia, namely 58,256 (16,7%) case of the total 348,809 cases of canser. The research objective was to analyze the factors associated with breast canser. The research was an analytic survey with a cross sectional approach. The population was 99 respondents who experienced breast canser in January-July 2020. The sample were 30 respondents as outpatient of Oncology Surgical Clinic Of Pirngadi Hospital Medan. The results showed that there was a relationship between age (p=0,0000), parity (p=.005), age at first menstruation (menarche) (p= .002), history of breast canser (p=.024), smoking habits (p=.024) and contraception (p=.005) with breast canser based on the result of the chi square test with p-value <.05. and the results of the multivariate analysis of the dominant factors were the variable age at first menstruation (menarche) with a significant value of .005 (p-value .05), the value of the B coefficient of 3.555 was positive, and the use of contraceptives with a significant value of.009 (p-value <.05), the value of the coefficient B, was 3.219 was positive. The conclusion showed a relationship between age, parity, age at fierst menstruation (menarche), history of breast canser, smoking habits, and use of contraceptives were found. |
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**Introduction**

Breasts are one of the most important body parts in a woman's body. Besides being able to beautify the shape of the body, breasts can produce breast milk (breast milk) which is very beneficial for the growth of children. So, it is important for us to care for and pay attention to breast health, in order to avoid disease problems such as breast cancer. Breast cancer is a scourge of things that women fear, even though this disease can be cured. However, ignorance of the factors that cause breast cancer is one of the problems among the community.

Cancer itself is a disease caused by hormonal irregularities that result in the growth of flesh in normal body tissues. Cancer is growing flesh whose existence is not expected because it can interfere with the function of other organs (Savitri, Alina, & Utami, 2015).

Breast cancer is a threat to women. Although there is now the best treatment, but the fight against breast cancer is not always successful. This is because there is still a lack of attention from women in understanding breast cancer to avoid breast cancer attacks and how to do early detection (Kartikawati & Payudara, 2016).

Cancer control programs are carried out for all types of cancer, especially uterine cancer and breast cancer. Activities carried out include primary, secondary, and tertiary prevention. Primary prevention is carried out through controlling risk factors and improving communication, information and education. Secondary prevention is carried out through early detection and management carried out at the Puskesmas and referral to the Hospital. And tertiary prevention is carried out through palliative and rehabilitative care in health care units that deal with cancer and the formation of cancer *survivor*  groups in the community (Sastrosudarmo, 2015).

Data obtained based on an initial survey from Dr. Pringadi Medan Hospital in the period January to June 2020 there were 99 cases with various stages of breast cancer. Every breast cancer patient who seeks treatment at Pringadi Hospital they are already at stages 2 and 3 which are difficult to cure. But by knowing the factors of breast cancer early or quickly, this can be prevented before entering the advanced stage or stage 2 and stage 3.

Breast cancer is not a contagious disease, but it is a major infectious problem and sufferers tend to increase. To reduce the number of breast cancer patients, related cooperation is needed between the Ministry of Health or foundations engaged in health to overcome the problem of breast cancer. In addition, trainers are also needed for medical personnel as an effort to increase women's awareness to detect their breast cancer early (Samadi, 2015).

Women experience more pressure about their body minds because women have multiple roles in their lives. Women are expected to provide for children, husbands, and earn a living so that their own health is sometimes marginalized. Women often neglect their health and adopt an unhealthy lifestyle (RP&R, 2015).

Behaving healthy from an early age plays a role in determining a person's medical history when they are old. The fitness level of people who are diligent in physical activity is different from people who live in *a sedentary* style. Namely, a lifestyle that is more sedentary than other active movements. However, it is undeniable that some diseases are not solely caused by unhealthy lifestyles, but also from genetic factors. That is, there is no guarantee that the body will never get a disease. Especially in women, must be more aware to maintain health. This is because women have vital organs that are susceptible to disease.

In addition, in everyday life, estrogen and progesterone are widely consumed by the public, especially women. One example of the use of the hormones estrogen and progesterone is hormonal contraception which is used as contraceptives, this is also a trigger for breast cancer. Plus people who often consume ready-to-eat foods, and a high-fat, low-fiber diet that affects the development of body cells (Astuti & Anggarawati, 2020).

According to 2018 Global *Cancer Observatory data from the* World Health Organization  *(WHO) shows the most common cancer cases in Indonesia are breast cancer, namely 58,256 cases or 16.7% of the total 348,809* cancer cases. Cervical cancer (cervix) is the second most common type of cancer in Indonesia as many as 32,469 cases or 9.3% of the total cases.

Based on estimates by the *International Amercan Cancer Society*  (ACS) in 2020, breast cancer is the highest cancer 279,100 people, lung and brongkus cancer 228,820 people, prostate cancer 191,930 people, collectum cancer 147,950 people, melanoma cancer in the skin 100,350 people, bladder cancer 81,400 people. And the highest mortality rate is lung and bronchial cancer 135,720 people, collectum cancer 53,200 people, pangkreas cancer 47,050 people, breast cancer 42,690 people, prostad cancer 33,330, followed by liver cancer and intrahapetic bile ducts 30,160 people.

The Ministry of Health (Kemenkes) in 2018 stated, the breast cancer rate in Indonesia reached 42.1 people per 100 thousand population. The average death from this cancer reaches 17 people per 100 thousand population. Meanwhile, the cervical cancer rate in Indonesia reached 23.4 people per 100 thousand population. The average death rate from cervical cancer reaches 13.9 people per 100 thousand population.

The incidence of cancer in Indonesia (136.2/100,000 population) ranks 8th in Southeast Asia, while in Asia ranks 23rd. The highest incidence rate in Indonesia for men is lung cancer which is 19.4 per 100,000 population with an average death of 10.9 per 100,000 population, followed by liver cancer of 12.4 per 100,000 population with an average death of 7.6 per 100,000 population. While the highest incidence rate for women is breast cancer which is 42.1 per 100,000 population with an average death of 17 per 100,000 population followed by cervical cancer of 23.4 per 100,000 population with an average death of 13.9 per 100,000 population (Kemenkes, 2013).

Based on data from Riskesdas Tahubn 2018, the prevalence of tumors/cancer in Indonesia showed an increase from 1.4 per 1000 population in 2013 to 1.79 per 1000 population in 2018. The highest cancer prevalence is in Yogyakarta province at 4.86 per 1000 population, followed by West Sumatra at 2.47 79 per 1000 population and Gorontalo at 2.44 per 1000 population (Riskesdas, 2013).

 Based on the background above, the author is interested in conducting a study entitled "Analysis of Factors Associated with Breast Cancer in Women at RSUD Pirngadi Medan in 2020"

**Research Methods**

The research design used in this study is an analytical survey with a *cross sectional*  approach (transverse surgery) which is a research or review of the relationship between two variables in a situation or a group of subjects that aims to find out with a quantitative approach.

The sample technique that I used in this study is a *proposive sample* sampling technique, which is taking the number of samples as many as the number of researchers want to be used as research respondents as many as 30 people. Due to limited energy and time and to find out the patient's willingness to be a respondent, researchers submit *informant consent* to be filled as a willingness or not forced. To facilitate sampling, researchers created inclusion criteria and inclusion criteria.

**Results and Discussions**

**Analisa Univariat**

**Table 1 Frequency Distribution of Respondents Based on Age at RSUD Pirngadi Medan in 2020**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Characteristics of Respondents** | **Sum (n)** | **Presented (%)** |
| 1. | Age |  |  |
| 2 | <40 tahun≥40 year | 1020 | 33,366,7 |
|  | **Total** | **30** | **100** |

Based on table 1, it shows that the age of the most respondents is the age of ≥40 years as many as 20 respondents (66.7%) and a small number of respondents aged < 40 years as many as 10 respondents (33.3%).

**Table 2 Frequency Distribution of Respondents Based on Parity at RSUD Pirngadi Medan in 2020**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Characteristics of Respondents** | **Sum (n)** | **Presented (%)** |
| 1 | 1. Paritas
2. Per second parade (2 child)
3. Multipara (3-4 child)
 | 327 | 1090 |
|  | **Total** | **30** | **100** |

Based on table 2 shows that in the parity category the most respondents are Multipara who have children (3-4 children) as many as 27 respondents (90%) and a small part with the Sekundipara category have (2 children) as many as 3 respondents (10%).

**Tabel 3 Distribusi Frekuensi Responden Berdasarkan usia menstruasi pertama (*menarche*) di RSUD Pirngadi medan tahun 2020**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Characteristics of Respondents** | **Sum (n)** | **Presented (%)** |
| 1. | Age of the first menstruation (*Menarche*) |  |  |
| 2. | 1. *Menarche* < 12 tahun

*Menarche* ≥ 12 tahun | 822 | 26,773,3 |
|  | **Total** | **30** | **100** |

Based on table 3, it shows that in the first Mentruation Age category (*Menarche*), the most respondents were Menarche ≥ 12 years as many as 22 respondents (*73.3%) and a small part with the Menarche category ≥ 12 years as many as*  *8 respondents (26.7%).*

**Table 4 Frequency Distribution of Respondents Based on family history of breast cancer at RSUD Pirngadi Medan in 2020**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Characteristics of Respondents** | **Sum (n)** | **Presented (%)** |
| 1. | Riwayat Kanker Payudara |  |  |
| 2. | 1. Tidak ada riwayat

Ada riwayat | 1713 | 56,743,3 |
|  | **Total** | **30** | **100** |

Based on table 4 shows that in the category of History of Breast Cancer the most respondents are no history as many as 17 respondents (56.7%) and a small part with the category There is a history of 13 respondents (43.3%).

**Table 5 Frequency Distribution of Respondents Based on Smoking Habits at RSUD Pirngadi Medan in 2020**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Characteristics of Respondents** | **Sum (n)** | **Presentase (%)** |
| 1. | Smoking Habits |  |  |
| **2.** | 1. No smoking1. Smoke
 | 1713 | 56.743,3 |
|  | **Total** | **30** | **100** |

Based on table 5 shows that in the category of smoking habits the most respondents were those who did not smoke as many as 17 respondents (56.7%) and a small part with the category of smoking as many as 13 respondents (43.3%).

**Table 6 Frequency Distribution of Respondents Based on contraceptives at RSUD Pirngadi Medan in 2020**

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Characteristics of Respondents** | **Sum (n)** | **Presented (%)** |
| 1. | Contraceptives |  |  |
| **2.** | 1. Non-hormonal
2. Hormonal
 | 921 | 3070 |
|  | **Total** | **30** | **100** |

Based on table 6 shows that in the category of contraceptives, the most hormonal respondents were 21 respondents (70%) and a small number with non-hormonal as many as 9 respondents (30%).

**Bivariat Analysis**

Bivariate analysis is used to determine the relationship between the independent variable and the dependent variable with the following results

**Age Relationship with Breast Cancer**

Based on the table above, out of 30 respondents at the age of <40 years  *with no breast cancer category as many as 6 respondents (*20.0%) and with yes category with breast cancer as many as 4 respondents (13.3%). And those aged >40 years no one did *not*  get breast cancer and the *yes* category with breast cancer as many as 20 respondents (66.7%).

Based on the results of research on the relationship between age and breast cancer, the results of statistical tests with Chi-Square *showed a significant relationship between age and breast cancer at Pringadi Medan Regional General Hospital, with 95%, CI, probability value (*p*) = 0.000 <0.05*.

**Parity Relationship with Breast Cancer**

Based on the table above that of the 30 respondents at Sekundipara parity (2 children) with no breast cancer category as *many as 3 respondents (10.0%) and yes category*  with no breast cancer. While Multipara parity (3-4 children) with category *not as many as 3 respondents (10.0%) and* category yes *with breast cancer as many as 27 respondents (90.0%).*

Based on the results of research on the relationship of parity with breast cancer, the results of statistical tests *with Chi-Square* showed a significant relationship between parity with breast cancer at Pringadi Medan Regional General Hospital, with 95%, CI, probability value (*p*) = 0.005 <0.05.

**Age Contact of First Menstruation (*Menarche)* of Mothers with Breast Cancer**

Based on the table above, out of 30 respondents in *menarche* ≥12 years with  *no breast cancer category as many as 5 respondents (*16.7%) and yes category with breast cancer as many as 3 respondents (10.0%). And in *menarche* <12 years with the category *of not affected by breast cancer as many as* 1 respondent (3.3%) and the yes category with breast cancer as many as 21 respondents (70%).

Based on the results of research on the *relationship between First Menstrual Age (Menarche) and breast cancer, statistical test results* with Chi-Square *showed a significant relationship between First Menstrual Age* (Menarche) *and breast cancer at Pringadi Medan Regional General Hospital, with 95%, CI, probability value (*p*) = 0.002 <0.05*.

**Relationship History of Breast Cancer in the Family of Mothers with Breast Cancer**

Based on the table above, out of 30 respondents who had no history with no  *breast cancer category as many as 6 respondents (20.0%) and yes category* with breast cancer as many as 11 respondents (36.6%). And there was a history with no breast cancer categoryand *yes* category with breast cancer as many as 13 respondents (43.3%).

Based on the results of research on the relationship between Family History of Breast Cancer with breast cancer, the results of statistical tests with Chi-Square *showed a significant relationship between Family History of Breast Cancer with breast cancer at Pringadi Medan Regional General Hospital, with 95%, CI, probability value (*p*) = 0.024 <0.05.*

**Smoking Addiction with Breast Cancer**

Based on the table above, of the 30 respondents who did not smoke with the *category of no* breast cancer as many as 6 respondents (20.0%) and the *category yes* with breast cancer as many as 11 respondents (36.7%). And those who smoked with the category *did not* get breast cancer did not exist and the *category yes* with breast cancer as many as 20 respondents (66.7%).

Based on the results of research on the relationship between smoking and breast cancer, statistical test results with *Chi-Square* showed a significant relationship between smoking and breast cancer at Pringadi Medan Regional General Hospital, with 95%, CI, probability value (*p*) = 0.024 <0.05.

**Maternal Contraceptive Relationship with Breast Cancer**

Based on the table above, out of 30 respondents who used non-hormonal contraceptives with a category not breast cancer as many as 6 respondents (20.0%) and category yes with breast cancer as many as 4 respondents (13.3%). And using hormonal contraceptives with the category of not affected by breast cancer as much as 1 respondent (3.3%) and the yes category with breast cancer as many as 20 respondents (66.7%).

Based on the results of research on the relationship between using contraceptives and breast cancer, the results of statistical tests with Chi-Square showed a significant relationship between using contraceptives and breast cancer at the Pringadi Medan Regional General Hospital, with 95%, CI, probability value (p) = 0.005 <0.05.

**Multivariate Analysis**

Multivariate analysis selects variables whose p value < 0.05 in the bivariate test (chi-square) are included simultaneously in the multivariate test Then after the first stage is completed, the variables whose p value < 0.25 will be included in the multivariate test which aims to find out which variable is most related to breast cancer in women at Pringadi Medan Hospital in 2020.

**Table 7 Selection of Model Candidate Variables in Logistic Regression Test Based on Bivariate Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Variabel** | **P *value*** | **Seleksi** |
| 1 | Age | 0,000 | (Candidat) |
| 2 | Parity | 0,005 | (Candidat) |
| 3 | Age of first menstruation | 0,002 | (Candidat) |
| 4 | Family history of breast cancer | 0,024 | (Candidat) |
| 5 | Smoking habits | 0,024 | (Candidat) |
| 6 | Contraceptives | 0,005 | (Candidat) |

Based on table 9 above, it can be seen that all variables are candidates for the *logistic regression* test model where *the p value* < 0.25. The results of the first stage *of logistic regression* analysis can be seen in the following table:

**Table 8 Results of the First Stage of Logistic Regression Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Variable** | **B** | **P *value*** |
| 1 | Age | 21,203 | 0,998 |
| 2 | Parity | 0,866 | 0,001 |
| 3 | Age of first menstruation | 3,045 | 0,003 |
| 4 | Family history of breast cancer | 21,203 | 0,998 |
| 5 | Smoking habits | 21,203 | 0,998 |
| 6 | Contraceptives | 2.996 | 0,003 |

Based on table 8 above, it can be seen that the *logistic regression* analysis of bivariate variables included in the logistic *regression analysis* has 3 variables. Furthermore, the 3 variables were analyzed again to see which variable was more dominant in breast cancer in women at Pirngadi Medan Hospital in 2020. The results of the analysis of the last stage of *logistic regression* can be seen in the following table :

**Table 9 Final Stage Results of Logistic Regression Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Variabel** | **B** | **P *value*** |
| 1 | Age of first menstruation | 3,555 | 0,005 |
| 2 | Contraceptives | 3,219 | 0,009 |

Based on table 9 above, it can be seen that logistic regression analysis produces 2 (two) variables that have a relationship with breast cancer in women with a p *value* of < 0.05. The most dominant factors related to breast cancer in women are the variable age of the first menstruation (*menarche*) with a significant value of 0.005 (p value < 0.05), the value of coefficient B which is 3.555 is positive, and the use of contraceptives with a significant value of 0.009 (p value < 0.05), the value of coefficient B is 3.219 is positive.

**DISCUSSION**

**Age Relationship with Breast Cancer at RSUD Pirngadi Medan**

Based on the results of the study, it can be seen that the age of respondents who experience breast cancer is mostly aged ≥40 years by 66.7%. The results of statistical tests with *Chi-Square* showed a relationship between age and breast cancer at Pringadi Medan Hospital, probability value (*p*) = 0.000 < 0.05. This means that respondents who have the age of ≥40 years have a chance of breast cancer compared to respondents who are < 40 years old.

Women who are old are more likely to develop breast cancer. About one in eight invasive breast cancer patients are found in women under forty years of age, while two out of three women with invasive breast cancer are fifty years of age or older when the cancer is detected.

As a woman gets older, the fat cells in her breasts tend to produce large amounts of *the aromatase*  enzyme, which in turn increases local estrogen levels. Locally produced estrogen is believed to play a role in triggering breast cancer in post-menoupose women. Once formed, the tumor then increases its estrogen levels to help it grow. Groups of tumor immune cells also seem to increase estrogen production.

In the 2018 National Guidelines for Breast Cancer Management, it is also stated that women over fifty years old experience a greater risk of developing breast cancer than younger women. The results of the study were in accordance with research conducted by Marice entitled risk factors for breast tumors in women in five sub-districts of Central Bogor District which showed that there was a relationship between age groups with the incidence of breast tumors with *p* value = 0.000 and respondents who had an age of ≥40 years risked 13.34 times for breast tumors with a group of < 40 years (Maurice & Manousou, 2018).

Another study conducted by Sirait found that there is a relationship between age and the incidence of breast cancer with a value of p = 0.006, the value of OR = 1.79 means that respondents who have the age of > 45 years have a 1.79 times chance of experiencing breast cancer incidence compared to respondents aged < 45 years (Junita & Panjaitan, 2022).

**The Relationship of Parity with Breast Cancer at RSUD Pirngadi Medan**

Based on the results of the study, it can be seen that the parity of respondents who experience breast cancer mostly have children with multiparous categories (2-4 children) of (90%). The results of statistical tests with *Chi-Square* showed a relationship between parity and breast cancer at Pringadi Medan Hospital, probability value (*p*) = 0.005 < 0.05. This means that respondents who have a chance of breast cancer are respondents who have 3-4 children compared to respondents who have children ≤ 2 children.

The hormone estrogen in women is the main ingredient that causes breast cancer. Pregnancy and breastfeeding a baby can lower estrogen levels in the blood, therefore a woman's risk of developing breast cancer will decrease every time the woman becomes pregnant and breastfeed her baby exclusively (Mulyani & Rinawati, 2013).

According to Anggorowati, the age of giving birth to the first child ≥ 30 years and not having children until the age of 30 years can increase the risk of developing breast cancer. This is because the period between the age of *menarche* and the age of the first pregnancy there is a hormonal imbalance and breast tissue is very sensitive to it, so this period is the beginning of the development of breast cancer (Anggorowati, 2013).

**The Relationship Between First Menstrual Age and Breast Cancer at RSUD Pirngadi Medan**

Based on the results of the study, it can be seen that the age of the first menstruation *(menarche)* of respondents who experience breast cancer is mostly 73.3%. The results of statistical tests with *Chi-Square* showed a relationship between the age of the first menstruation  *(menarche)*  and breast cancer at Pringadi Medan Hospital, the probability value (*p*) = 0.002 < 0.05. This means that respondents who have a chance of breast cancer are respondents < 12 years who first get their first menstruation (menarche)  *compared to respondents who get their first menstruation (*menarche*) >12 years.*

This study is in accordance with the theory that women who start having an early period before the age of 12 years or who have gone through life changes (menopausal phase). After the age of 55 years have a slightly higher risk of developing breast cancer. They have more menstrual periods and as a result have more estrogen and progesterone hormones (Utami, 2012).

The results of this study are also in line with Fatmawati's researcher, "Factors Associated with Breast Cancer in Women of Childbearing Age Couples in Rsu Vina Estetica in 2019". Chi-Square test resultsobtained maternal weight p = 0.000 <α .05, age menarche p = .017 <α .05, duration of hormonal contraceptive use p = .048 <α .05 and consuming fast food p =.022 <α .05. Conclusions showed that there was an association between maternal weight, age of menarche, duration of hormonal contraceptive use and fast food consumption with breast cancer in women of childbearing age at Vina Estetica General Hospital in 2019 (Fatmawati, 2020).

**The relationship between family history of breast cancer and breast cancer at RSUD Pirngadi Medan**

Based on the results of the study, it can be seen that the history of breast cancer in the family of respondents who experienced breast cancer amounted to 56.7%. The results of statistical tests with *Chi-Square* showed a relationship between a family history of breast cancer with breast cancer at Pringadi Medan Hospital, probability value (*p*) = 0.024 < 0.05. This means respondents who

Having a history of breast cancer has a chance of breast cancer, compared to those who do not have a history of breast cancer.

The risk of breast cancer will be higher in women who have blood ties with families who have had breast cancer. The family can come from the family of father and mother. Having a mother, sister who has breast cancer will have twice the risk of developing breast cancer by five times (Briani Sobri, 2017).

This is also in line with researcher Septi Wahana Pintarti, "Risk Factors for Breast Tumor in Women Aged 25-65 years in Five Sub-districts of Central Bogor District in 2016", Results: The related factors in this study are age factors and family history as evidenced in the results of bivariate analysis which shows that age (p-value = 0.004; OR = 5.450; CI:1845,19,193) and family history (p-value = 0.000;OR = 8.615; CI : 2,647,28,045). Results of multivariate analysis of age (OR: 0.190) family history (OR: 0.128). Factors shown to have an association with breast cancer are age and family history. Bluntness: There is a relationship between age and family history with breast cancer incidence. It is hoped that Panembahan Senopati Bantul Hospital can improve health promotion of the importance of early detection of breast cancer or BSE in women, especially in women who have a family history of cancer (Anggraeni & Handayani, 2019).

**The relationship between smoking habits and breast cancer at RSUD Pirngadi Medan**

Based on the results of the study, it can be seen that the smoking habits of respondents who experienced breast cancer were partially 56.7%. The results of statistical tests with *Chi-Square* showed a relationship between smoking and breast cancer at Pringadi Medan Hospital, probability value (*p*) = 0.024 < 0.05. This means that respondents who smoke are at risk of breast cancer, compared to respondents who do not smoke.

Consuming cigarettes is clearly strongly associated with an increased risk of breast cancer. Women who smoke increase up to one and a half times that of women who do not smoke at all.

This is in line with the theory that says that smoking can cause obstacles in the metabolism of estrogen and progesterone levels in the blood. Excessive cigarette consumption can disrupt liver function in estrogen metabolism, so that estrogen levels remain high in the blood, and this can increase the risk of breast cancer. (26)

**The relationship between contraceptives and breast cancer at RSUD Pirngadi Medan**

Based on the results of the study, it can be seen that respondents who experience breast cancer are more likely to have a history of hormonal contraceptives (at risk) by 70.0%. The results of statistical tests with *Chi-Square* showed that there was a relationship between hormonal contraceptives and breast cancer at Pringadi Medan Hospital, probability value (*p*) = 0.005 < 0.05. This means that respondents who use hormonal contraceptives contain breast cancer, compared to respondents who use non-hormonal contraceptives.

The use of hormonal contraceptives in Indonesia has been popular in the community and the percentage of hormonal contraceptive users is injections (38.5%), pills (31%), and implants (12.3%). One of the factors in the occurrence of paudara cancer is hormonal ancanan, especially the hormone estrogen in the body. The growth of breast tissue is very sensitive to the hormone estrogen, therefore women who are exposed to this hormone for a long time will be at risk of developing breast cancer. Women who use birth control pills have a slightly higher risk of developing breast cancer than those who do not use them.

Several studies have been conducted related to risk factors for breast cancer incidence. The results were obtained including research conducted by Tia Arsittasari, the results showed that factors associated with the incidence of breast cancer were age (p-value = 0.005), age of menarche (p-value = 0.019), history of breastfeeding (p-value = 0.008), history of using hormonal birth control (p-value = 0.019) and family history (p-value = 0.014). The conclusion of this study is that there is an association between age, age of menarche, history of breastfeeding, history of using hormonal birth control and family history with the incidence of breast cancer (Arsittasari, Estiwidani, & Setiyawati, 2017).

**The Most Dominant Factors Associated with Breast Cancer in Women at RSUD Pirngadi Medan in 2020**

Based on the results of multivariate analysis, it is known that the most dominant factors associated with breast cancer in women at Pringadi Medan Hospital are the first menstrual age variable (*menarche) with a significant value of 0.005 (p value < 0.05), the value of coefficient B which is 3.555 is positive*, and the use of contraceptives with a significant value of 0.009 (p value < 0.05), the value of coefficient B which is 3.219 is positive.

The hormone estrogen in women is a hormone associated with the development of breast cancer. The hormone is produced by the mother egg. This hormone begins to activate when women first menstruate (*menarche*). Meanwhile, estrogen hormone levels and early *menarche* can be influenced by several things, such as high-fat, low-fiber foods, excess weight, less physical activity and a healthy lifestyle (Lincoln, 2008).

In addition, factors in the use of hormonal contraceptives showed results that using hormonal birth control had a 2.9 times greater risk of breast cancer than those who did not use hormonal birth control. The results of this study are supported by Al-Amri's research in Saudi Arabia in 2015, namely there is a significant relationship between the use of hormonal contraceptives in the long term with the incidence of breast cancer. There is a significant relationship between the use of hormonal birth control with the incidence of breast cancer, this is because the hormones estrogen and progesterone contained in the contraceptive can cause cell mutations when division increases, and the hormones estrogen and progesterone can also stimulate the growth of cancer cells in the breast. (44).

**Conclusion**

Based on the results of the research and discussion described in the previous chapter, it can be concluded that some important things in this study are: There is an age relationship with breast cancer in women at Pirngadi Medan Hospital in 2020. There is a parity relationship with breast cancer in women at RSUD Pirngadi Medan in 2020. There is a relationship between the age of first menstruation (menarche) and breast cancer in women at RSUD Pirngadi Medan in 2020. There is a relationship between a history of breast cancer and breast cancer in women at RSUD Pirngadi Medan in 2020. There is a relationship between smoking habits and breast cancer in women at RSUD Pirngadi Medan in 2020. There is a relationship between contraceptives and breast cancer in women at RSUD Pirngadi Medan in 2020

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