

Analysis of Characteristics Associated with Cervical Precancerous Lesions in Women of Reproductive Age

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ABSTRACT

Cervical precancerous lesions are changes in the cell nucleus before cervical cancer occurs. The prevalence of cervical cancer in Indonesia is in second place in 2020 (17.2%). At the Padang Pasir Public Health Center, 56 positive cases were found in 2019. This study was to analyze the relationship between the characteristics of women of reproductive age and the incidence of precancerous lesions. This type of research is an analytic survey with a case-control design. The population of the study was all women who had an visual Inspection with Acetic Acid at the Padang Pasir Public Health Center. The number of samples is 56 people (28 cases, 28 controls). Data were analyzed by chi-square test. The results showed that there was a relationship between the age of marriage and the incidence of precancerous lesions ($p = 0.003$, $OR = 0.09$), there was a relationship between the number of children and the incidence of precancerous lesions ($p = 0.00$, $OR = 0.04$), there was a relationship between the incidence of vaginal discharge with the incidence of precancerous lesions ($p = 0.02$, $OR = 0.1$), there was no relationship between the contraceptive use and the incidence of precancerous lesions ($p = 0.16$, $OR = 0.4$), there was no relationship between the history of cancer and the incidence of precancerous lesions ($p = 0.35$, $OR = 0.2$). The conclusion is that there is a relationship between married age, number of children and the incidence of vaginal discharge with the incidence of precancerous lesions.

Keywords: *charateristics, women of reproductive age, cervical precancerous lesions.*

1. INTRODUCTION

In Indonesia, the problem of cervical cancer is still a matter that needs attention, because more than seventy percent of cases are found in advanced stages. Of all types of cancer in women in Indonesia, cervical cancer ranks second. In 2018 the prevalence of cervical cancer in Indonesia showed an increase from 15/100,000 population in 2008 to 23.4/100,000 population in 2018 according to Globocan data. The occurrence of cervical cancer is preceded by a condition called precancerous lesions. Cervical precancerous lesions are cervical cell abnormalities in the form of changes in the cell nucleus before the cell nucleus becomes the nucleus of cancer cells. Mild dysplasia will progress to moderate dysplasia in about fifteen percent of cases, moderate dysplasia will progress to severe dysplasia in about thirty percent and about forty percent regress to mild dysplasia. About forty-five percent of severe dysplasia will progress to carcinoma in situ and about twenty percent will regress to moderate dysplasia. All cases of carcinoma in situ

will develop into microinvasive and then invasive carcinoma. Prevention efforts to prevent invasive cancer can still be done at the dysplasia stage. Pap smears and using the acetic acid visual inspection (IVA) method are efforts made to prevent invasive cancer from occurring. In addition to the pap smear examination, the VIA examination is one of the alternative screening examinations, because it is cheaper, more practical, easy to implement, the equipment used is also simple and can be carried out by health workers other than gynecologists.

The coverage of the IVA examination in West Sumatra Province in 2018 was 18.89%, based on Indonesia's health profile. In 2019, the City of Padang represented the Province of West Sumatra for the IVA assessment at the National level because it was the best at the provincial level for cervical cancer detection by the IVA method. Data on the coverage of early detection of cervical cancer using the IVA method and breast cancer with clinical examination (SADANIS)

which was held in 2018, at Puskesmas throughout the city of Padang out of 23 health centers in the city of Padang, the most positive VIA examinations were at the Padang Pasir Public Health Center where from 1,225 women were examined and in 2019 there were 1,304 people, seen from the number who underwent an IVA examination there was an increase.

Cervical cancer is caused by infection with certain types of human papilloma virus (HPV). HPV plays an important role as a cause of cervical cancer, in addition to HPV infection, the forerunner of cervical cancer with the occurrence of precancerous lesions, which can be influenced by several other factors such as age at first sexual intercourse or age at first marriage of less than 20 years, parity number, presence of vaginal discharge. , families affected by cancer and use of contraceptives.

Cases of cervical cancer are often found in young women to the age of more than 50 years and rarely occur in women under the age of 20 years. About 20% occur in women over 65 years. Generally, cervical cancer is diagnosed between the ages of 35-55 years. Age >35 years has a high risk of cervical cancer. The increased risk of cervical cancer in the elderly is caused by the increased and longer exposure to carcinogens and the weakening of the immune system due to age. The time it takes to become invasive cancer is about 10 years or more. Parity is one of the risk factors associated with cervical cancer and is more common in married and multiparous women.

The initial study was conducted through medical record data at the Padang Pasir Public Health Center, Padang City, on 10 patients with positive VIA. There were 3 people with married age <20 years, 3 people with parity >3, 1 mother with a family history of cervical cancer, 1 mother using contraception and 2 experiencing vaginal discharge.

Judging from the high number of VIA examinations and the incidence of precancerous lesions at the Padang Pasir Public Health Center, Padang City, and from various research results that age at first marriage or sexual intercourse, parity, family history of cervical cancer, use of contraceptives and experiencing vaginal discharge are factors that influence affect the occurrence of precancerous lesions, thus sparking interest in conducting research on the analysis of the characteristics of women of childbearing age (WUS) with the incidence of precancerous lesions at the Padang Pasir Public Health Center, Padang City.

2. METHODS

The initial study was conducted through medical record data at the Padang Pasir Public Health Center, Padang City, on 10 patients with positive VIA. There were 3 people with married age <20 years, 3 people with parity >3, 1 mother with a family history of cervical cancer, 1 mother using contraception and 2 experiencing vaginal discharge. Judging from the high number of VIA examinations and the incidence of precancerous lesions at the Padang Pasir Public Health Center, Padang City, and from various research results that age at first marriage or sexual intercourse, parity, family history of cervical cancer, use of contraceptives and experiencing vaginal discharge are factors that influence affect the occurrence of precancerous lesions, thus sparking interest in conducting research on the analysis of the characteristics of women of childbearing age(WUS) with the incidence of precancerous lesions at the Padang Pasir Public Health Center, Padang City.

3. RESULTS

Table 1. Married age in WUS with the incidence of precancerous lesions

Married Age	Positive	Negative	Total	p	OR
No Risk	15	26	41	0,003	0,09
%	36,6	63,4	100,0		
Risk	13	2	15	86,7	13,3
%	86,7	13,3	100,0		
Total	28	28	56	50,0	50,0
%	50,0	50,0	100,0		

From table 1, it can be seen that the age of marriage of respondents with the incidence of positive precancerous lesions is more at risk ages than the incidence of negative precancerous lesions.

Based on the results of statistical tests, p-value = 0.003 it can be concluded that there is a relationship between married age and the incidence of cervical precancerous lesions. The OR value obtained from the analysis was 0.09, meaning that the married age who was at risk had a 0.09 risk of developing cervical precancerous lesions compared to those who were not at risk.

Table 2. The number of children in WUS with the incidence of precancerous lesions

Number of children	Positive	Negative	Total	p	OR
No Risk	14	27	41	0,00	0,04
%	34,1	65,9	100,0		
Risk	14	1	15	93,3	6,7
%	93,3	6,7	100,0		
Total	28	28	56	50,0	50,0
%	50,0	50,0	100,0		
	0	0	0		

Table 3. Vaginal discharge in WUS with the incidence of precancerous lesions

vaginal discharge	Positive	Negative	Total
No Risk	18	26	44
%	40,9	59,1	100,0
Risk	10	2	12
%	83,3	16,7	100,0
Total	28	28	56
%	50,0	50,0	100,0

From table 3, it can be seen that the incidence of precancerous lesions is more common in those at risk compared to those at no risk.

Based on the results of statistical tests, p-value = 0.02, it can be concluded that there is a relationship between vaginal discharge and the incidence of cervical precancerous lesions. The OR value obtained from the analysis is 0.1, meaning that vaginal discharge has a 0.1 risk of developing cervical precancerous lesions compared to those without vaginal discharge.

Table 4. Types of contraception in WUS with the incidence of precancerous lesions

Type of Contraception	Positive	Negative	Total	p	OR
Non hormonal	15	21	36	0,02	0,1
%	41,7	58,3	100,0		
hormonal	13	7	20	65,0	35,0
%	65,0	35,0	100,0		
Total	28	28	56	50,0	50,0
%	50,0	50,0	100,0		
			0		

From table 4, it can be seen that the type of contraception of respondents with positive precancerous

lesions were more hormonal than non-hormonal types of contraception.

Based on the results of statistical tests, p-value = 0.02, it can be concluded that there is a relationship between the type of hormonal contraception and the incidence of cervical precancerous lesions. The OR value obtained from the analysis was 0.1, meaning that the type of hormonal contraception at risk had a 0.1 risk of developing cervical precancerous lesions compared to the number of children who were not at risk.

Table 5. History of cancer in WUS with the incidence of precancerous lesions

Cancer history	Positive	Negative	Total	p	OR
No	24	27	51	0,16	0,4
%	47,1	52,9	100,0		
Yes	4	1	5	80,0	20,0
%	80,0	20,0	100,0		
Total	28	28	56	50,0	50,0
%	50,0	50,0	100,0		
			0		

From table 5, it can be seen that the history of cancer in WUS with the incidence of precancerous lesions is more common in the age at risk compared to the age not at risk.

Based on the results of statistical tests, p-value = 0.02, it can be concluded that there is a relationship between the type of hormonal contraception and the incidence of cervical precancerous lesions. The OR value obtained from the analysis was 0.1, meaning that the type of hormonal contraception at risk had a 0.1 risk of developing cervical precancerous lesions compared to the number of children who were not at risk.

4. DISCUSSIONS

From table 1, it can be seen that the married age of respondents with the incidence of positive precancerous lesions were more at risk ages than the incidence of negative precancerous lesions.

Based on the results of statistical tests, p value = 0.003 it can be concluded that there is a relationship between married age and the incidence of cervical precancerous lesions. The OR value obtained from the analysis was 0.09, meaning that the married age who was at risk had a 0.09 risk of developing cervical precancerous lesions compared to those who were not at-risk.

Research conducted by Ferdianti, E, showed that almost half of the respondents (50%) had positive precancer lesions, most (58.3%) were married 20 years and 20

years, and almost all (81.9%) mothers were >35 years old. Another study conducted by Rahmawati, L in 2019 found that precancerous lesions at risk age <20 years who had had their first sexual intercourse were more common than those at non-risk age with $p = 0.023$ with an OR value of 2.583. This means that the age of marriage <20 years has a 2.583 risk of developing precancerous lesions compared to the age of marriage that is not at risk or >20 years.

Formation of cells or lining the walls of the vagina and cervix that are not fully mature, which is caused by the imbalance of the hormonal system, this can be caused by the age of marriage or those who have had sexual relations <20 years

Women who have sexual intercourse too early have a great risk for cervical cancer. This is associated with the formation of cells or lining the walls of the vagina and cervix that are not fully mature, caused by hormonal imbalances. The size of maturity depends on the mucous cells found in the skin membranes inside the body cavity. Generally, new mucosal cells mature after women are over 20 years old. Therefore, sexual intercourse performed under the age of 20 years allows the occurrence of injury to the cervix. Wounds inflicted become an easy medium for infection, including infection from the HPV virus that causes cervical cancer.

From table 2, it can be seen that the number of respondent children with the incidence of precancerous lesions was more in the number of children at risk than the number of negative precancerous lesions.

Based on the results of statistical tests, p value = 0.00, it can be concluded that there is a relationship between the number of children and the incidence of cervical precancerous lesions. The OR value obtained from the analysis was 0.04, meaning that the number of children at risk had a 0.04 risk of developing cervical precancerous lesions compared to the number of children who were not at risk.

Research conducted by Rahmawati, L in 2019, found that respondents who had precancerous lesions were greater than respondents who did not have precancerous lesions. Statistical test results obtained p value = 0.002, there was a relationship between children or parity with the incidence of cervical precancerous lesions, with an OR value obtained from the analysis was 3,587, meaning that mothers with parity > 3 children had a risk of 3,587 having cervical precancerous lesions.

Another similar study was the Lestariningsih study at Abdul Moeloek Hospital Bandar Lampung in 2016 with the results of a parity relationship > 3 children with the incidence of cervical precancerous lesions with a p value of 0.036 and an OR of 2.38.

The number of children born to a woman or the most optimal parity of births up to three times. The risk for cervical cancer is higher if more and more births are experienced by a woman. Women who have been pregnant for 9 months have three times the risk of getting cervical cancer. Some allegations of this condition can be caused or influenced by hormonal changes during pregnancy that make women potentially more susceptible to infections caused by the HPV virus, because during pregnancy their resistance body decreases.

Another opinion is that there is a correlation between the number of parity and cervical cancer, including, during the delivery process, the fetus comes out through the cervix which is the cervix, the bridge between the uterus and the vagina. Expulsion of the fetus will cause trauma to the cervix. If the cervix experiences continuous births, the cervix will also be more traumatized. Second, there are hormonal changes for women during pregnancy, making them more susceptible to HPV infection and cancer growth. Third, is the opinion that pregnant women have lower immunity, making it easier for HPV to enter the body which leads to cancer growth.

From table 3, it can be seen that the incidence of precancerous lesions is more common in those at risk compared to those at no risk.

Based on the results of statistical tests, p value = 0.02, it can be concluded that there is a relationship between vaginal discharge and the incidence of cervical precancerous lesions. The OR value obtained from the analysis is 0.1, meaning that vaginal discharge has a 0.1 risk of developing cervical precancerous lesions compared to those without vaginal discharge.

The results of a study conducted by Paremejanga, RA, found that the analysis of the risk factors for a history of pathological vaginal discharge showed that there was a relationship with the incidence of cervical precancerous lesions (IVA+) with a p value of 0.021. The OR value showed that women who had experienced pathological vaginal discharge had a 3.375 times risk of developing cervical precancerous lesions compared to women who did not experience pathological vaginal discharge.

Vaginal discharge is characterized by a large amount of vaginal discharge, white, yellow to greenish in color, smells bad, and causes itching, even pain. leads to pathological vaginal discharge. Pathological vaginal discharge is caused by inflammation of the genitals as a result of infection by microorganisms such as the fungus *Candida albicans*, the bacteria *Neisseria gonorrhoeae*, and the parasite *Trichomonas vaginalis* and is also a symptom of diseases in the uterine organs such as cervical cancer and others.

Mostly in the vagina there are various kinds of bacteria, such as lactobacillus bacteria (good bacteria) and the rest are pathogenic bacteria (disease-causing bacteria). Lactobacillus bacteria play an important role in maintaining the vaginal environment by producing hydrogen peroxide which makes the vaginal pH normal (3.8-4.5). With this PH range, pathogenic bacteria will be easily killed so as to avoid genital infection. If the vaginal PH condition is in abnormal conditions, it causes pathogenic microorganisms to grow and develop and inhibits lactobacillus bacteria from producing hydrogen peroxide so that in these circumstances HPV can easily enter the cervix. In addition, the presence of infection in the genital area affects the body's lack of ability to fight HPV infection so that HPV easily infects the cervix. This is what causes a history of pathological vaginal discharge that has the potential to cause cervical precancerous lesions.

From table 4, it can be seen that the type of contraception of respondents with positive precancerous lesions was more hormonal than that of non-hormonal contraceptives.

Based on the results of statistical tests, p value = 0.02, it can be concluded that there is a relationship between the type of hormonal contraception and the incidence of cervical precancerous lesions. The OR value obtained from the analysis was 0.1, meaning that the type of hormonal contraception at risk had a 0.1 risk of developing cervical precancerous lesions compared to the number of children who were not at risk. Research Parwati, et al (2015) women of childbearing age who use hormonal contraception >5 years have a 10.7 times higher risk of developing cervical pre-cancerous lesions compared to those who do not use hormonal contraception, and use of <5 years increases the risk by 3.0 times higher than that women of childbearing women who did not use hormonal contraception. Hormonal contraceptives trigger changes in the cervical epithelium, presumably because estrogen induces oncogenesis directly in the cervical epithelium.

From table 5, it can be seen that the history of cancer in WUS with the incidence of precancerous lesions is more common in those at risk compared to those at no risk.

Based on the results of statistical tests, p value = 0.02, it can be concluded that there is a relationship between the type of hormonal contraception and the incidence of cervical precancerous lesions. The OR value obtained from the analysis was 0.1, meaning that the type of hormonal contraception at risk had a 0.1 risk of developing cervical precancerous lesions compared to the number of children who were not at risk.

Research conducted by Rahmawati, L, 2019 found that respondents who had a family history of cervical cancer

were greater than respondents who did not have cervical precancerous lesions. The results of statistical tests obtained p value = 0.124, so it can be concluded that there is no relationship between a family history of cervical cancer and the incidence of cervical precancerous lesions.

This study is in line with the research of Fitriasia et al at the Puskesmas working area of the Muara Bungo 1 Health Center in 2019 which stated that there was no relationship between a family history of cervical cancer and the incidence of cervical precancerous lesions with a p value of 0.252. However, this study is not in line with the research of Aziyah et al at Dr Kariadi Hospital Semarang in 2016 which stated that there was a relationship between a family history of cervical cancer and the incidence of cervical precancerous lesions with a p value of 0.032.

A genetically inherited condition that causes an inability to fight HPV. So if a woman has a history of cervical cancer in her family (mother or sister) it is likely to increase the risk of cervical cancer in her family. Risk factors for cervical cancer caused by the wrong lifestyle. However, if a sibling or mother has a history of cervical cancer, then a person's risk for cervical cancer is also greater than women who do not have such a family history. Some studies suspect this is related to the reduced ability of the person and his family to fight off HPV infection.

AUTHORS' CONTRIBUTIONS

The author contributes in every stage of the research, namely in the initial survey, data collection, data analysis, and making proceedings.

ACKNOWLEDGMENTS

The author would like to thank LPPM Baiturrahmah University, Padang Pasir Health Care and all parties who have assisted in the implementation of this research,

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