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Research Article

Risk factors associated with the occurrence of precancerous cervical lesions at health centres of Karanganyar regency

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ABSTRACT

Background: Precancerous cervical lesions is sign of cervical cancer. The development of precancerous cervical lesions is difficult to detect, so it is recommended every woman conduct examination by using visual inspection with acetic acid (VIA) because it is inexpensive and effective. The number of cervical cancer screening Health Department of Karanganyar Regency in 2014 was 3285 people and 345 people positive for precancerous cervical lesions. The figure is very less considering the achievement of the target number is 120244 people with target every years 19239 people.
Methods: Analytical research with case control design. The number of sample was 40 women positive IVA and the control sample were 40 women with negative IVA. Samples were taken with consecutive sampling technique in June-August 2015 at Health Centres of Karanganyar Regency. Data analysis used chi-square and logistic regression.
Results: Results of chi-square analysis found there is significant relationship between age, age when they have first intercourse, number of partners, social and economic parity ($p<0.05$). Results of logistic regression test found significant risk factor is number of partners OR=5,026 (CI 95% 1,265 - 19,973).
Conclusions: The most dominant risk factors on the incidence of precancerous lesions of the cervix are the number of couples. Suggested to the health center staff to identify, advice and motivate women the risk of precancerous lesions of the cervix examination IVA.

Keywords: Precancerous cervical lesions, Risk factors, VIA

INTRODUCTION

Cancer is one of the non-communicable diseases are a public health problem. Based on estimates Globocan, the International Agency for Research on Cancer (IARC) in 2012, the incidence of breast cancer is 40 per 100,000 women, cervical cancer is 17 per 100,000 women, lung cancer is 26 per 100,000 males and colorectal cancer is 16 per 100,000 men.[1-3] The highest incidence of cervical cancer in Europe is Hungary 22.5 per 100,000 women per year, followed by 21.6 per 100,000 women Slovakia and the Czech Republic amounted to 18.9 per 100,000 women.[26]

The prevalence of cervical cancer in Indonesia is still there dirasio 1.3 per 1000 population, or around 840 people.[6] Based Health Research in 2013, the prevalence of cancer is 1.4 per 1000 population, or about 330,000 people. Based Hospital Information System in 2010, inpatient cases 12.014 cases of breast cancer (28.7%) and 5.349 cervical cancer cases (12.8%).[5] Based on data from the Department of Central Java Province, the incidence of cervical cancer in the year 2014 as many as 909 cases.[8] An estimated 90 percent of cervical cancers are caused by Human Papillomavirus (HPV).[7,8]

Precancerous lesions are one of the signs that may be cancerous. Signs and symptoms of cancer include

bleeding during intercourse, excessive vaginal discharge, pain in the pelvic area and when urinating. The high incidence of cervical cancer is caused by sexual activity before age 20 years, changing sexual partners, exposure to infection is sexually transmitted, mother / sister with cervical cancer, smoking or exposure to cigarette smoke (passive smoking) and less to maintain cleanliness.[14]

Early detection of cervical cancer can be examined VAI because they cost less and are more effective.[14] VAI sensitivity 75% and specificity of 85%.[13] Early detection coverage in Indonesia is less than 5% so many cases of cervical cancer is found at an advanced stage that often lead to death.[6] Based on data from the Directorate Subdit Cancer constraints early detection of cervical cancer is the lack of education, women tend to be afraid to consult, the lack of early detection programs are organized to the maximum mass, social and cultural factors of society.[6] One of the health promotion program in Indonesia is a see and treat.[19] Health promotion can increase knowledge about cervical cancer and women's participation in cancer early detection program serviks.[25] Implementation of health promotion programs in expected to detect 80 percent of women of childbearing age in Indonesia in 2015.[6]

METHODS

This research is an analytical research studies and case-control approach of retrospective approach. Population in this study were all women who get VAI in health centers of Karanganyar regency in July - August 2015. The total number of population in this study were 80 respondents with 40 respondents case group and the control group of 40 respondents with concecutive sampling techniques. The independent variables were age, age of first perform intercourse, number of partners, social and economic parity, while the dependent variable was the incidence of precancerous lesions of the cervix. This study using univariate, bivariate and multivariate analysis. Bivariate analysis using the chi-square and multivariate analysis using logistic regression test with $\alpha = 0.05$ at the 95% CI.

RESULTS

Figure 1: Precancerous of cervical lesion examination.

Table 1 shows most of the characteristics of respondents include employment, education and family history of cancer in the control group and the case group has the same category that do not work each respectively 60% and 67.5%, high school education 55% and 42.5%, no history of cancer 82.5% and 78.8%. Based on Table 5 it can be seen that all the characteristics of respondents have a value of p>0.05 so that it can be concluded all respondents in this study have homogeneous characteristics (Table 1).

Table 1: Frequency distribution characteristics of the respondents in the case control group.

Karakteristik Responden	Kategori	Kelompok kontrol		Kelompok Kasus		*P* Homogenitas
		n	%	n	%	
Job	Employe	16	40%	13	32.5%	0.181
	Unemployee	24	60%	27	67.5%	
Education	Elementary	5	12.5%	9	22.5%	0.062
	Yunior	9	22.5%	6	15%	
	Senior	22	55%	17	42.5%	
	Unversity	4	10%	8	20%	
History of cancer	No	33	82.5%	30	78.8%	0.105
	Any history	7	17.5%	10	21.2%	

Data source: Primary 2015.

Based on bivariate analysis showed all the risk factors have a statistically significant relationship (p <0.05). According to Table 2, the age of first intercourse did have risk of cervical precancerous lesions greatest with OR = 4.333 (Table 2). Multivariate analysis in Table 3 shows, the parity ≥3 have 0.326 times greater risk for precancerous cervical lesions occur after controlled by age, the age of first perform intercourse, number of partners and socio-economic (Table 3).

Table 2: Relationship of risk factor for cervical precancerous lesions in health centres of karanganyar regency.

		Cervical precancerous lesions			*OR*
Risk factors	**N**	**No lesion**	**lesion**	**p-value**	**(95% CI)**
Age					
20 – 35 years	39	25 (64.1%)	14 (35.9%)	0.014	3.095
36 – 50 years	41	15 (36.6%)	26 (63.4%)		(1.243- 7.706)
Age of first intercouse					
≥20 years	63	36 (57.1%)	27 (42.9%)	0.014	4.333
<20 years	17	4 (23.5%)	13 (76.5%)		(1.271 – 14.777)
The number of pairs					
1 person	74	36 (56.2%)	27 (43.8%)	0.025	3.857
>1 person	6	4 (25%)	13 (75%)		(1.122 – 13.258)
Parity					
Primipara	51	31 (60.8%)	20 (39.2%)	0.011	3.444
Multipara	29	9 (31.0%)	20 (69.0%)		(1.310 – 9.058)
Social economi					
≥UMR	47	28 (58.6%)	19 (40.4%)	0.041	2.579
<UMR	33	12 (36.4%)	21 (63.6%)		(1.030 – 6.457)

Data source: Primary (*chi-square*).

Table 3: Results of multivariate analysis of risk factors for cervical precancerous lesions in centres of Karanganyar regency.

	Risk factors	Coefficent	*pvalue*	OR (95% CI)
Langkah 1	Age	0.592	0.380	1.807 (0.482 – 6.770)
	Age of first intercouse	1.211	0.083	3.357 (0.854 – 13.193)
	The number of pairs	1.512	0.036	4.536 (1.106 – 18.601)
	Parity	0.778	0.236	2.178 (0.601 – 7.894)
	Social economi	1.351	0.018	3.860 (1.265 – 11.782)
	Constanta	-1.655	0.001	0.191
Langkah 2	Age of first intercouse	1.349	0.049	3.852 (1.007 – 14.742)
	The number of pairs	1.615	0.022	5.026 (1.265 – 19.973)
	Parity	1.108	0.043	3.030 (1.037 – 8.849)
	Social economi	1.234	0.023	3.436 (1.183 – 9.984)
	Constanta	-1.465	0.001	0.231

Data source: Primary (regresi logistic).

DISCUSSION

The relationship of age with the incidence of precancerous cervical lesions

A significant relationship between age and the incidence of precancerous cervical lesions are also shown that an increase in a person's age by the declining performance of organs - organs and immune system.[1] The older a person, the level of immunity also began to decline. When immune levels start to decline then it is easy for the HPV virus to develop in the body.[22] Women aged 30-50 years is the peak of reproductive age and sexually active so prone to precancerous lesions of the cervix considering HPV can be transmitted through sexual intercourse. Our research proves aged 36-50 years had a risk three times more likely to occur precancerous lesions of the cervix while research Wahyuningsih and Mulyani and Setyarini states the age of 35-50 years have a risk five times more likely to have precancerous lesions of the cervix.[28] Increased incidence of precancerous cervical lesions caused not only by the increase in age but also influenced by the length of the individual exposure to carcinogens and the weakening of the immune system due to age.[22]

The age of first intercourse relationship with the incidence of precancerous cervical lesions

The significance of the relationship between age of first intercourse with the incident perform cervical precancerous lesions is also evidenced by any reseach.[4] Age at first did intercourse not only as the main cause of cervical precancerous lesions but also increases susceptibility to cancer agents and other sexually transmitted diseases. Age did intercourse less than 20 years old have a risk three times more likely to have

precancerous lesions of the cervix.[23] The increased risk of precancerous lesions of the cervix is not only influenced by the age of first sexual intercourse but is also affected by the age at first marriage, the social economy and the level of a person's knowledge.[11]

Relations with the incidence of the number of pairs of cervical precancerous lesions

A significant relationship between the number of sexual partners with cervical precancerous lesions is also evidenced in the research.[15] HPV infection can occur through sexual intercourse. The HPV virus enter through mucous membranes micro lesion penetration on the interval between exposure and development lesions between 8 weeks to 8 months.[22] Our study found women who have more sexual partners than have a risk four times more likely to have precancerous lesions of the cervix. Based on research concluded that cervical precancerous lesions not only can occur in women who have more than one sexual partner, but also can occur in women with sexual partners (male) who also had more than one partner.[4,9,20]

The relationship of parity with the incidence of precancerous cervical lesions

A significant association between parity with the incidence of precancerous lesions of the cervix is also evidenced in the research.[16] Precancerous lesions of the cervix can occur because of damage / tear epithelial tissue that occurs during normal deliveries. This provides an opportunity for contamination HPV virus.[22] Not only the cervical precancerous lesions caused by trauma to the cervix, but can also be caused by vaginal hygiene conditions are not maintained, causing an infection that ended in malignancy.[3] The relationship number of children born with the incidence of cervical cancer is often associated with trauma and infection of the birth canal during delivery.[9] Our research proves having parity ≥3 times 3 times greater risk for precancerous cervical lesions occur while women with parity>3 has a 5 times greater risk for precancerous cervical lesions.[18] The increase in the incidence of precancerous cervical lesions associated with pregnancies that are too close distance and hormonal factors caused by the consumption of drugs -drug-related hormonal and hormonal changes during pregnancy and childbirth.[17]

The socio-economic relationships with the incidence of precancerous cervical lesions

A significant relationship between socioeconomic incidence of precancerous lesions of the cervix is also evidenced in the research.[4] Women with low economic status have a limited income, so that access to health services is also limited. Besides lower socioeconomic associated with lower awareness of health and behavioral problems prevention of health problems.[21] Our research shows that women with low socioeconomic <UMR have a risk three times more likely to have precancerous lesions of the cervix and suggest women with low incomes at risk 4 times more likely to occur precancerous lesions cervical cancer.[4] Income levels are directly related to the standard of living, low-income women is almost five times higher risk of cervical cancer than the group of higher-income women. Poverty resulted in their inability to get good health care and cannot pay for medical examinations are quite expensive.[25-26]

Risk factors for incidence of precancerous cervical lesions

Increased risk of cervical precancerous lesions associated with the amount of parity where women who have more parity than 3 risk of developing precancerous lesions of the cervix. This is due to sexual intercourse without using a safety (condoms) allows a woman is more exposed to the HPV virus, given that the HPV virus is transmitted through sexual contact.[12] The results of the study showed that the HPV virus can cause cells in the cervix undergo changes that can lead to cervical cancer. Women who have many sexual partners or whose partners have multiple sexual partners are at increased risk of developing cervical cancer and contracting sexually transmitted diseases. Women who have HPV or whose partners have HPV have a higher risk for cancer of the cervix.[22] However, the HPV virus is not only a major factor woman to undergo cervical cancer, but there are some risk factors that can cause cervical precancerous lesions such as number of partners, age of first intercourse, number of partners, social and economic parity.[2]

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