Determinant of Cervical Carcinoma Incidence Among The Participants of Cervical Cancer Preventive “See And Treat” with Visual Inspection Method of Acid Acetate

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Abstract— Background: Cervical cancer (neck of the womb) is an important health issue and the leading cause of cancer-related death in women in developing countries. This is the third type of most common cancer in women, with more than 1.4 million occurrence worldwide. More than 460,000 cases and 90% of them occur in developing countries and about 231,000 women die every year. According to The Ministry of Health Republic of Indonesia (2000), cervical cancer incidence were 100 per 100 thousand people per year. The purpose of this study is to investigate the determinants of the incidence of cervical carcinoma amongst the participants of cervical cancer prevention program with "see and treat" IVA examination method, and assessed the determinants affected its incidence. This study is an observational study using secondary data, derived from Female Cancer Programme, MFS "See and Treat" Project Leiden University Medical Center Leiden, The Netherlands collaborates with eight universities in Indonesia, collected by cross-sectional design. The sequence analysis of data includes univariate, bivariate and multivariate analysis. The results of study revealed that the most dominant major variables affecting the incidence of cervical carcinoma was vaginal fluids where the value of p = 0.000 OR = 4.17 (95% CI :2.61-6, 65). Interaction variables associated with the occurrence of cervical carcinoma was abnormal vaginal discharge (excessively, smelling and yellow) with the age of first marriage p = 0.003, OR = 0.88 (95% CI :0.34-2, 23). Guidance and counseling should be socialized concerning the main determinants associated with the incidence of cervical carcinoma through the media effectively and efficiently to encourage the women for regularly check-up.

Keywords; cervical carcinoma, cervical cancer

I. INTRODUCTION

In Indonesia, the cancer incidence data still unknown. Estimated, 90-100 new cases per 100,000 population per year, or approximately 180,000 new cases per year, and the gynecologic cancer constitute the greatest number, while ½ them were cervical cancer. From 1986 to 1990, The RSCM Hospital found 1821 patients with cervical cancer among 2360 cases of gynecologic cancers [1], while The Ministry of Health Republic of Indonesia (2000) estimated 100 incidences per 100 thousand inhabitants per year.

II. METHOD

This study is an observational study using secondary data derived from Female Cancer Programme, MFS "See and Treat” Project Leiden University Medical Center Leiden, The Netherlands with eight universities in Indonesia and those collected by the cross-sectional design. The research was carried out after an cervical carcinoma incident examination with visual inspection method of acid acetate, to capture the characteristics of cervical cancer among the participants of Indonesian “see and treat” model in cervical cancer prevention program with visual inspection method of acid acetate.

Population is the total units of analysis to be investigated [2]. The population of study were all participants of regional “see and treat” model cervical cancer prevention program in Medan from December 2007 to July 2008 who attend the cervical carcinoma examination with acetic acid visual inspection methods, and has the registered variables study, both dependent and independent (complete samples frame).

Sample is part of units in population to be investigated. The results are expected describe the actual characteristics in population [2]. The sample of study is total sampling or overall cervical carcinoma prevention program selected randomly by Indonesian "See and Treat" model, team in North Sumatra regional location from December 2007 to July 2008.

The minimum sample was calculated by two-test sample size with two-tailed hypothesis formula [3], [8], as follows:
n = \left\{ \frac{1 - \alpha/2 \sqrt{2PQ + Z_{1-\alpha} \sqrt{P_1Q_1 + P_2Q_2}}}{(P_1 - P_2)} \right\}

n = \text{sample size}
Z_{1-\alpha} = \text{Z value on significance level (\(\alpha\)) 5%}
Z_{1-\beta} = \text{Z value on power test (1-\(\beta\)) 80%}
P_2 = \text{proportion of cervical carcinoma incidence in unrisk group}
Q_2 = 1 - P_2
P_1 = \text{proportion of cervical carcinoma incidence in risky group}
Q_1 = 1 - P_1
P1-P2 = \text{minimum difference considered as significant proportion}
P = \text{Total proportion = } P_1 + P_2/2
Q = 1 - P

III. RESULT

A. Cervical Carcinoma Incidence

Stated that cervical carcinoma uteri were the first ranked (73.52% of the 2176 cases) of gynecological malignancy in Kariadi Hospital, Semarang [5]. While [6] in the department of Malalayang Hospital, Manado argued that 69.23% of 182 are cervical cancer in gynecologic cases. Dharmas Cancer Hospital, Jakarta found that cervical cancer distribution was at first ranks of all gynecologic cancers in 1993 to 1995 (72.6%, 74.3% to 78.9% ) [7].

B. Age relationship with Genesis Cervical Carcinoma

The results of bivariate analysis found that there was a significant relationship of age to cervical carcinoma incidence with \(p = 0.001\). This results was supported by several studies in USA, the common age related to cervical cancer are between 48-55 years with an average age of 53.8 years and median of 51.5 years [8]. [9] States although the average age at first diagnosis was 52 years, cervical cancer can be found in women in ages 17 to 90 years old.

C. Relationship of Age at first Intercourse with Cervical Carcinoma Incidence

The result of bivariate and multivariate analyses revealed that there was a significant relationship between the age of first intercourse first with incidence of cervical carcinoma. In the final model multivariate analysis, the age at first intercourse correlated with vaginal discharge that affected the incidence of cervical carcinoma value OR = 0.21, figure out that the participants were abnormal vaginal discharge and first intercourse at age <20 years is 0.2 times more likely to experience cervical carcinoma incident compared to participants with normal vaginal discharge and fist intercourse at age \(\geq 20\) years old.

These results were supported by the theory of [10] which states first sexual intercourse (Coitarche) at an early age as a risk factor for cervical cancer related to the changing conditions on the connection squamous epithelium-kolumner, vulnerable at a young age that allows the infection of sexually transmitted diseases.

D. Relationship of Pregnancy Frequency on Cervical Carcinoma Incidents

The results of bivariate analysis found that there was a significant relationship between the pregnancy frequency on cervical carcinoma incident with \(p = 0.001\). It was supported by the opinion of [11], stated that the woman who gave more birth has the higher risk on cervical cancer, especially for close distance deliveries. The more parity and a diet lacking in developing countries contribute to the high incidence rate (IR) ("See and Treat", Indonesia, 2007). While on stage multivariate analysis, the number of pregnancies was as confounding variables where the candidate selection stage variables lead to changes in other variables OR> 10% [12] Relationship of Number of Living Children on Cervical Carcinoma Incidents

In bivariate analysis results obtained no significant relationship between the number of living children where the value of \(p = 0.001\), odds ratio (OR) = 1.994 (95% CI :1.35-2, 94). This results was supported by several studies, [13] found 75% of patients with cervical cancer in parity > 5. [14] reported 66.23% in parity > 4. [15] found 65.94% in parity> 6. While in stage multivariate analysis, the number of living children as cofounding variables causes changes for other variables OR> 10% [12].

E. Relationship of Contraceptive Pills on Cervical Carcinoma Incidents

The results of the bivariate and multivariate analysis not revealed the association of contraceptive pill use on cervical carcinoma incidence, where in bivariate analysis and \(p = 0.561\) in multivariate phase variables contraceptive pills were excluded from the main effects model, because it does not lead to changes in other variables OR> 10%. The results of this analysis was similar to [16] which has conducted research on the side effects of oral contraceptives pills. The result of study conducted among women in East Java based his conclusions as follows:

- There was no relationship between oral contraceptive on cervical cancer with continuously use in the past 5 years.
- The use of oral contraceptive more than 5 years is not recommended unless the pap test showed good results.
A period of "free" pill for 3-6 months continuously acceptable, although it less guaranteed.

F. Relationship between papsmear examination history with Cervical Carcinoma Incidents.

The results of the bivariate and multivariate analysis revealed that there is no relationship between papsmear examination histories with the cervical carcinoma incident. Bivariate analysis obtained p-value = 1.000, multivariate analysis of these variables are excluded because the p value > 0.05.

G. Vaginal Discharge relationship with Cervical Carcinoma Incidents

The results of bivariate and multivariate analysis revealed that there was a significant relationship between vaginal discharge with cervical carcinoma incidence, where the value of p = 0.000, and the odds ratio value (OR) 4.17 (95% CI: 2.61-6.65). And the result of interaction between the vaginal fluid with variable age at first marriage also showed a significant relationship to the occurrence of cervical carcinoma, with p = 0.003, OR = 0.21 (95% CI: 0.07 to 0.59).

This is supported by the theory of [17]; [11] who claim that if the vaginal fluid that comes out excessive (abnormal fluid) sometimes cause itching and foul odor, it is necessary to beware, it could be a symptom of early precancerous cervix (cervical carcinoma).

IV. CONCLUSION

A. Conclusion

Based on the analysis, we conclude that:

1. There was a significant relationship between age, age at first intercourse, number of pregnancies, number of living children, vaginal discharge with cervical carcinoma (p < 0.05). While the contraceptive pill and papsmear examination history was not associated with the incidence of cervical carcinoma (p > 0.05).

2. The main variables associated with the incidence of cervical carcinoma is vaginal discharge where the value of p = 0.000, OR = 4.17 (95% CI:2.61-6, 65) and the age of first intercourse with a value of p = 0.000, OR = 3.38 (95% CI:2.14-5, 35). While the variables of age, number of pregnancies, and number of living children as confounding variable.

3. Interaction variables associated with the incidents of cervical carcinoma was vaginal discharge interaction with the age of first marriage with p = 0.003, = 0.21 OR (95% CI :0.07-0, 59).

4. Determinants of the dominant influence or prediction of cervical carcinoma incidents was vaginal discharge with p = 0.000, OR = 4.17 (95% CI :2.61-6, 65).

REFERENCES