

RELATIONSHIP OF RISK FACTORS WITH HISTOPATHOLOGICAL TYPES IN CERVICAL CANCER PATIENTS IN DR SOETOMO HOSPITAL

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ABSTRACT

Background: Cervical cancer is a process of changing into malignancy in the cervix. Based on studies and previous research, cervical cancer is the third female cancer in terms of incidence (527,600 new cases) and mortality (265,700 deaths) in the world. Cervical cancer has histopathological types in the form of squamous cell carcinoma, adenocarcinoma, and other types. This study aimed to analyze the relationship of risk factors with histopathological types in cervical cancer patients in Dr. Soetomo Hospital. Method: This analytical descriptive study used a cross sectional research design. The number of samples were 300 patients collected by total sampling. Independent variables were risk factors including age, marital age, parity, smoking, oral contraceptives, and education while dependent variables were histopathological types including squamous cell carcinoma, adenocarcinoma, and other types. Instruments used documentation. Data analysis used chi square, fisher and contingency coefficient tests. Results: There was a relationship of cervical cancer risk factors of age to histopathological type ($p= 0.000$ and contingency coefficient = 0.170) and no relationship of risk factors to number of parity ($p= 0.321$ and contingency coefficient = 0.064), marriage age ($p = 0.720$ and contingency coefficient = 0.038), smoking ($p = 0.711$ and contingency coefficient = 0.036), oral contraceptive ($p = 0.655$ and contingency coefficient = 0.042), education ($p = 0.744$ and contingency coefficient = 0.089) to histopathological type. Conclusion: There is a relationship between risk factors and histopathological types in cervical cancer patients at Oncology Polyclinic at Dr Soetomo Hospital of Surabaya.

INTRODUCTION

Cervical cancer is the result of the process of change into malignancy that occurs in the cervix (American Cancer Society, 2017). There was an increase of 3.9 percent in the number of cancer sufferers, which occurred in 2016 of 17.8 million people, an increase to 21.7 million people in 2017. By 2030 there will be a seven-fold surge in cancer patients in Indonesia (WHO, 2016). The incidence of cervical cancer in Indonesia in 2012 was 20,928 cases with 9,498 deaths. The majority of cervical cancer patients came for a check-up when they reached an advanced stage, i.e., stage IIB-IVB, which was 66.4%. Human Papilloma Virus (HPV) is one of the important factors to the development of cervical neoplasms and can be detected in 99.7% of cervical cancer patients (PNPK HOGI 2018).

The histopathological types of cervical cancer are mostly squamous cell carcinoma (69% of cervical cancer incidence) and adenocarcinoma (25%). Furthermore, there is another type, i.e., adenosquamous cell carcinoma. In recent years, precancerous lesions are not well detected by Pap smears and other screenings, causing adenocarcinoma to increase in depth. Adenocarcinoma has a worse prognosis than squamous cell carcinoma based on the results of previous studies. The majority of cervical cancer is diagnosed at an advanced stage (stage IIB-IIIB), while the success of cervical cancer to be cured depends on the availability of radiotherapy and chemotherapy. (PNPK POGI, 2018).

The purpose of conducting this study is that the results of this study can contribute to epidemiological data, especially for cases of cervical cancer that occurs in the city of Surabaya, because RSUD Dr. Soetomo is the last or tertiary referral place for cervical cancer sufferers. Therefore, the latest data in the form of a general description of cervical cancer cases is needed, especially the relationship between risk factors and the histopathological type of cervical cancer. This research can be

used as a reference for proper management of cervical cancer. In addition, with this study, it can help reduce the incidence of cervical cancer that occurs in Surabaya.

METHOD

This descriptive analytic study used a cross sectional research design. The number of samples was 300 patients with the sampling technique using total sampling. The independent variables were risk factors including age, age of marriage, parity, smoking, oral contraceptives, and education level. The dependent variable was histopathological type including squamous cell carcinoma, adenocarcinoma, and other types. The instrument used documentation.

Data collection was in the form of medical records of cervical cancer patients in the One-Stop Oncology Polyclinic at Dr Soetomo Hospital for the 2018-2019 period. Based on the inclusion and exclusion criteria, the medical record data that matched the criteria were 300 cervical cancer patients. This study was conducted in February-May 2020. Data processing was carried out by editing, coding, entry, cleaning, and tabulating data. The data that had been collected and processed was then analyzed using the chi square test and fisher test, as well as the contingency coefficient with the help of the SPSS computer program.

RESULT AND DISCUSSION

1. Histopatology Type

Histopathological types of cervical cancer in this study consisted of squamous cell carcinoma, adenocarcinoma and other types (adenosquamous carcinoma). Characteristics of cervical cancer patients based on age at the Oncology Polyclinic at Dr Soetomo Hospital of Surabaya can be seen in the following table:

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Table 1 Frequency Distribution of Cervical Cancer Patients by Histopathological Type at the Oncology Polyclinic of Dr Soetomo Hospital in the 2018-2019 period

Histopathological Type	Total	Percentage (%)
<i>Squamous cell carcinoma</i>	224	75
<i>Adenocarcinoma</i>	60	20
Other Type (adenosquamous carcinoma)	16	5
Total	300	100

Table 1 shows that most of the 224 (75%) cervical cancer patients had histopathological type in the form of squamous cell carcinoma.

2. Total Parity

The number of parities in this study included category 0 if cervical cancer patients had never given birth to babies at term, categories 1-2 if cervical cancer patients gave birth to babies at term 1-2 times, and category 3 if cervical cancer patients gave birth to babies at term. 3 times or more. The parity number of cervical cancer patients at the One-Roof Oncology Polyclinic of Dr. Soetomo Surabaya Hospital can be seen in the following table:

Table 2 Frequency Distribution of Parity of Cervical Cancer Patients at One-Roof Oncology Polyclinic at Dr Soetomo Hospital in the 2018-2019 period

Total Parity	Total	Percentage (%)
0	3	1
1-2	51	17
≥3	246	82
Total	300	100

Table 2 shows that most of the 246 (82%) cervical cancer patients at the Oncology Polyclinic at Dr Soetomo Hospital had a parity of 3.

3. Age at Marriage

The age of marriage in this study includes the category <21 years if cervical cancer patients have married at the age of less than 21 years, the age category is 21-35 years if cervical cancer patients have married at the age of 21 to 35 years, and categories > 35 years. If the cervical cancer patient has married at the age of more than 35 years. The marriage age of cervical cancer patients at the One-Roof Oncology Polyclinic of Dr. Soetomo Surabaya Hospital can be seen in the following table:

Table 3 Frequency Distribution of Marriage Age of Cervical Cancer Patients at the Oncology Polyclinic at Dr Soetomo Hospital in the 2018-2019 period

Age	Total	Percentage (%)
< 21	153	51
21-35 years	147	49
> 35 years	0	0
Total	300	100

Table 3 shows that 153 (51%) cervical cancer patients at the Oncology Polyclinic at Dr Soetomo Hospital were married at the age of <21 years.

4. Smoking

Smoking in this study included the yes category if the cervical cancer patient had a history of smoking, and the no category if the cervical cancer patient did not have a smoking history. History of smoking habits of cervical cancer patients at the Oncology Polyclinic of Dr. Soetomo Surabaya Hospital can be seen in the following table:

Table 4 Distribution of Smoking Frequency of Cervical Cancer Patients at Oncology Polyclinic at Dr Soetomo Hospital in the 2018-2019 period

Smoking	Total	Percentage (%)
Yes	78	26
No	222	74
Total	300	100

Table 4 shows that most of the 222 (74%) cervical cancer patients at the One-Roof Oncology Polyclinic at Dr Soetomo Hospital did not have a history of smoking.

5. Oral Contraception

Oral contraceptives in this study included the yes category if the cervical cancer patient had a history of using oral contraceptives, and the no category if the cervical cancer patient did not have a history of using oral contraceptives. The history of the use of oral contraceptives in cervical cancer patients at the Oncology Polyclinic of Dr Soetomo Hospital can be seen in the following table:

Table 5 Frequency Distribution of Oral Contraception in Cervical Cancer Patients at the Oncology Polyclinic at Dr Soetomo Hospital in the 2018-2019 period

Oral Contraception	Total	Percentage (%)
Yes	124	41
No	176	59
Total	300	100

Table 5 shows that most of the 176 (59%) cervical cancer patients at the Oncology Polyclinic at Dr Soetomo Hospital did not have a history of using oral contraceptives.

6. Education Level

The level of education in this study included the elementary school, middle and high school, college, and and the category of not going to school if cervical cancer patients did not take education. The education level of

cervical cancer patients at the Oncology Polyclinic of Dr. Soetomo Surabaya Hospital can be seen in the following table:

Table 6 Distribution of the Educational Level of Cervical Cancer Patients at the Oncology Polyclinic at Dr Soetomo Hospital in the 2018-2019 period

Educational Level	Total	Percentage (%)
Elementary	116	39
Junior and senior high	169	56
College and university	3	1
No study	12	4
	300	100

Table 6 shows that most of the 169 (56%) cervical cancer patients had studied up to junior high and senior high school.

7. Age

Age in this study included the <35 years category if cervical cancer patients were diagnosed with cervical cancer at the age of less than 35 years, the 35-50 years category if cervical cancer patients were diagnosed at the age of 35 to 50 years, and the >50 years category if the cervix cancer patients were diagnosed at age > 50 years. The age of cervical cancer patients at the Oncology Polyclinic of Dr. Soetomo Hospital can be seen in the following table:

Table 7 Age Frequency Distribution of Cervical Cancer Patients at One-Roof Oncology Polyclinic at Dr Soetomo Hospital in the 2018-2019 period

Age	Total	Percentage (%)
<35 years	22	7
35-50 years	126	42
>50 years	152	51
Total	300	100

Table 8 shows that 152 (51%) cervical cancer patients at the One-Stop Oncology Polyclinic at Dr. Soetomo General Hospital were >50 years old.

Analysis

1. The Relationship between Histopathological Type of Cervical Cancer and Total Parity

The relationship between histopathological type and parity in cervical cancer patients at the Oncology Polyclinic of Dr. Soetomo Hospital was tested using chi-square. The complete data shows that, the cervical cancer patients with histopathological type of squamous cell carcinoma, 187 (83%) had parity 3, 35 (16%) had parity 1-2, and 2 (1%) had parity 0. For the histopathological type of adenocarcinoma, 47 (78%) had parity 3, 12 (20%) had parity 1-2, and 1 (2%) had parity 0. Finally, for another type (adenosquamous carcinoma), 12 (75%) had parity 3, 4 (25%) had parity 1-2, and none (0%) had parity 0.

The results of statistical analysis using the chi fisher test obtained a p-value of 0.321 ($p > 0.05$), which means that there was no relationship between histopathological type and the number of parity in cervical cancer patients. This was reinforced by the results of the contingency coefficient between the histopathological type variables and the number of parity having a weak power of 0.064.

2. The Relationship between Histopathological Types of Cervical Cancer and Age

The relationship between histopathological type and age in cervical cancer patients was tested using chi square. The complete data shows that, for cervical cancer patients with the histopathological type of squamous cell carcinoma, 122 (55%) were diagnosed with cervical cancer at the age of > 50 years, 86 (38%) were diagnosed with cervical cancer at the age of 35-50 years, and 16 (7%) were diagnosed with cervical cancer at the age of < 35 years. For the histopathological type of adenocarcinoma, 35 (58%) were diagnosed at the age of > 50 years, 21 (35%) were diagnosed at the age of 35-50 years, and 4 (7%) were diagnosed at the age < 35 years. Finally, for adenosquamous carcinoma, 9 (56%) were diagnosed with cervical cancer at

the age of > 50 years, 5 (31%) were diagnosed at the age of 35-50 years and 2 (13%) were diagnosed at the age < 35 years.

The results of statistical analysis using the chi square test obtained a p-value of 0.000 ($p > 0.05$), which means that there was a relationship between histopathological type and age in cervical cancer patients. This was reinforced by the results of the contingency coefficient between histopathological type variables and age which had sufficient power of 0.170.

3. The Relationship between Histopathological Type of Cervical Cancer and Age at Marriage

The relationship between histopathological type and age of marriage in cervical cancer patients was tested using chi square. The complete data shows that, for cervical cancer patients with the histopathological type of squamous cell carcinoma, 122 (50%) got married at the age of < 21 years and 122 (50%) at the age of 21-35 years, and there was none who got married at the age of > 35 years. For the histopathological type of adenocarcinoma, 33 (55%) got married at the age of < 21 years, and 27 (45%) at the age of 21-35 years and there were no cervical cancer patients who got married at the age > 35 years. For adenosquamous carcinoma, 8 (50%) married at the age of < 21 years, and 8 (50%) were at the age of 21-35 years, and there were no patients who married at the age of > 35 years.

The results of statistical analysis using the chi square test obtained a p-value of 0.720 ($p > 0.05$), which means there was no relationship between histopathological type and age at marriage in cervical cancer patients. This was reinforced by the results of the contingency coefficient between histopathological type variables and age at marriage which had a weak strength of 0.038.

4. Relationship between Histopathological Type of Cervical Cancer and Smoking

The relationship between histopathological type and smoking in cervical cancer patients was tested using chi square. The complete data

shows that, for cervical cancer patients with the histopathological type of squamous cell carcinoma, 166 (74%) had no history of smoking and 58 (26%) had a history of smoking. While the histopathological type of adenocarcinoma, 43 (72%) did not have a history of smoking and 17 (28%) had a history of smoking. For adenosquamous carcinoma, 13 (81%) had no history of smoking and 3 (19%) had a history of smoking.

The results of statistical analysis using the chi square test obtained a p value of 0.711 ($p > 0.05$), which means there was no relationship between histopathological type and smoking in cervical cancer patients. This was reinforced by the results of the contingency coefficient between histopathological type variables and smoking which had a weak strength of 0.036.

5. The Relationship between Histopathological Types of Cervical Cancer and Oral Contraceptives

The relationship between histopathological type and oral contraceptives in cervical cancer patients was tested using chi square. The complete data shows that, for cervical cancer patients with the histopathological type of squamous cell carcinoma, 129 (57%) had no history of using oral contraceptives and 95 (43%) had a history of using oral contraceptives. While the histopathological type of adenocarcinoma, 38 (63%) had no history of using oral contraceptives and 22 (37%) had a history of using oral contraceptives. For adenosquamous carcinoma, 9 (56%) had no history of oral contraceptive use and 7 (44%) had a history of oral contraceptive use.

The results of statistical analysis using the chi square test obtained a p value of 0.655 ($p > 0.05$), which means there was no relationship between histopathological type and oral contraceptives in cervical cancer patients. This was reinforced by the results of the contingency coefficient between histopathological type variables and oral contraceptives which had a weak power of 0.042.

6. The relationship between histopathological type of cervical cancer and education level

The relationship between histopathological type and education level in cervical cancer patients was tested using chi-square. The complete data shows that, for cervical cancer patients with the histopathological type of squamous cell carcinoma, 126 (57%) had studied up to elementary school level, a total of 86 (39%) to junior high school and high school level, a small portion 3 (1%) had studied up to undergraduate and graduate levels and 7 (3%) had not attended the education level. While the histopathological type of adenocarcinoma, 34 (57%) had attended junior high and high school education, a total of 24 (40%) had attended elementary school and 2 (3%) had no education, then there were no patients who took undergraduate education. For adenosquamous carcinoma, 9 (56%) had studied up to junior high and high school levels, a total of 6 (38%) had studied up to elementary school level and 1 (6%) had no education level.

The results of statistical analysis using Fisher's test obtained a p value of 0.744 ($p > 0.05$), which means that there was no relationship between histopathology type and education level in cervical cancer patients. This was reinforced by the results of the contingency coefficient between histopathological type variables and the number of levels of education having a weak strength of 0.089

CONCLUSION

The conclusions are drawn as follows:

1. Mostly patients had histopathological type in the form of squamous cell carcinoma.
2. Mostly patients had a parity of 3.
3. Mostly patients' age was >50 years old.
4. Mostly patients were married at the age of <21 years.

5. Mostly patients did not have a history of smoking
6. Mostly patients had no history of using oral contraceptives.
7. Mostly patients had studied up to junior high and high school levels.
8. There was a relationship between age and histopathological type and there was no relationship between the number of parity, age at marriage, smoking, oral contraceptives, education level with histopathological types in cervical cancer patients at the Oncology Polyclinic of Dr Soetomo Hospital of Surabaya.

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