

Characteristics of Patients with Cervical Cancer in Sanglah General Hospital Denpasar

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Abstract: ***Backgrounds:** Cervical cancer remains a common health problem in women in recent years. However, in Indonesia especially Bali, the data of cervical cancer is still limited. As the highest referral hospital in Bali, Sanglah General Hospital is ideal for collecting data on cervical cancer patients annually. This study aims to find out the characteristics of patients with cervical cancer in Sanglah General Hospital Denpasar. **Methods:** This study was a descriptive study. This study was conducted at Sanglah General Hospital to collect data of all cervical cancer patients from January 1st 2018 to December 31st 2019. The data were collected from registry of gynecology clinic and medical records. The data taken were cervical cancer stage, age, parity, educational status, occupation, type of histopathology, smoking history, pap smear history, and history of oral contraceptives use. The data then were compiled and tabulated in tabular and narrative form. **Results:** Total of 649 patients were included in this study, 63% of all gynecological cancers cases at the gynecology clinic of Sanglah General Hospital. Mean age of the patients was 48.24 years old with highest prevalence was at the age range of 40-49 years old (35%). Most of the patients was housewives (31%), parity 0 to 2 (61%), senior high school educational background (41%). For the cancer stage, three stages with the most number were stage IIB (31%), IIIB (26%), and IB1 (11%). Most common type of histopathological result was squamous carcinoma (63%). From the patients, 90% had no pap smear history, none had smoking history, and 33% had oral contraceptives. **Conclusions:** The highest prevalence is observed at the age range of 40-49 years old, housewives, parity 0 to 2, senior high school educational background, and stage IIB. Common type of cancer is squamous carcinoma. Majority of the patients have never had pap smear history and smoking history. More patients have never used oral contraceptive before.*

Keywords: cervical cancer, characteristics, Bali

1. Backgrounds

Cervical cancer is an abnormal growth (malignancy) in the cervical area. The main etiology is infection with Human Papillomavirus (HPV). Several risk factors are known to play a role in increasing the incidence of HPV infection. The disease screening should be conducted for early detection thereby establishing an early diagnosis and prompt treatment. It is necessary to understand the characteristics of patients with cervical cancer in order to prevent and perform rapid and appropriate management in suppressing the incidence of cervical cancer.

Cervical cancer remains a common health problem in women in recent years. The causes of cervical cancer are multifactorial. The increasing morbidity and mortality rate of this disease should have made all parties aware, especially women.¹ Cervical cancer is the second highest lead for cancer mortality in women worldwide after breast cancer. About 14,000 women are diagnosed with cervical cancer annually and more than 7,000 people die from this disease. This means every hour one woman dies of cervical cancer, with a five years prevalence of about 64.9 percent. The Global Cancer Observatory (GLOBOCAN) stated that in 2018 new cases of cervical cancer in Indonesia reached 32,469 people. The mortality rate from cervical cancer reaches 18,279 annually. This means that around 50 Indonesian women die every day from cervical cancer. The rate increased compared to the 2012 GLOBOCAN data stating that 26 Indonesian women die from cervical cancer every year. The Indonesian Basic Health Study (RISKESDAS) in 2018 demonstrated cancer prevalence in the province of Bali to be 2.3 per mile, increased prevalence when compared to the 2013 data of 2.0 per mile.²

Based on data from the Bali Provincial Health Office in 2016, cervical cancers were found in each region in Bali Province. The incidence rate in Jembrana Regency, Tabanan Regency, Badung Regency, Gianyar Regency, Klungkung Regency, Bangli Regency, Karangasem Regency, Buleleng Regency, and Denpasar City were 1,798 (1.77%), 7,041 (16%), 3,387 (5%), 1,515 (2%), 1,911 (7%), 797 (2%), 589 (1%), 2,809 (2%), 1,607 (1%), respectively.

Given the rapid increase in cervical cancer incidence worldwide, especially Indonesia, along with the remaining limited epidemiological data on cervical cancer, especially in Bali, Sanglah General Hospital (RSUP) Denpasar as the highest referral hospital in Bali and the eastern part of Indonesia must have studied the epidemiological data on cervical cancer patients annually. The data is essential for the government, medical personnel, and the community for the evaluation and early prevention of cervical cancer.

2. Materials and Methods

This study is a descriptive study. This study was carried out at Sanglah General Hospital Denpasar during August 2020 to December 2020. The study sample were all cervical cancer patients admitted to Sanglah Hospital Denpasar from January 1st 2018 to December 31st 2019. The data for this study were obtained from: (1) Registry of gynecology clinic of Sanglah General Hospital, (2) Medical records of patients with cervical cancer.

The data collected were:

- Cervical cancer stage: based on 2009 FIGO classification.
- Age: grouped into <30 years old; 30-39 years old; 40-49 years old; 50-59 years old; 60 years old.

- c) Parity: number of live births delivery. Devided into 3 groups, 0-2;3-4; and >5.
- d) Educational status: last educational level. Grouped into elementary school, junior high school, senior high school, and university/college.
- e) Occupation: before and when diagnosed with cervical cancer.
- f) Types of histopathology. Grouped into squamous carcinoma, adenocarcinoma, and adenosquamous carcinoma.
- g) Smoking history: history of whether the patient has and or is still smoking up to now.
- h) Pap smear history: history of whether the patient had a pap smear before being diagnosed with cervical cancer. Pap smear history was stated as never or never.
- i) History of oral contraceptives use: history of whether the patient has used oral contraceptives before.

The data obtained were then compiled and tabulated and presented in tabular and narrative form.

3. Results

A total of 649 subjects of cervical cancer patients visited the oncogynecology clinic at Sanglah General Hospital and were included in this study. The proportion of cervical cancer patients in the period was 63% of all gynecological cancers at the clinic. The mean age of patients with cervical cancer who visited the obstetrics outpatient clinic was 48.24 years with the oldest age being 72 years and the youngest age being 22 years. The highest prevalence of cervical cancer patients was in the range of 40-49 years (227 patients; 35%) (Table 1). Cervical cancer patients in this study were mostly housewives (201 patients, 31%), followed by private employee (29%), civil servants and farmers (12% respectively), traders (8%), businesswomen and unemployed (4% respectively).

Table 1: Characteristics of Study Subjects

Study subject characteristics	N (%)
Age group	
<30 year	39 (6%)
30-39 year	78 (12%)
40-49 year	227 (35%)
50-59 year	215 (33%)
≥60 year	90 (14%)
Occupation history	
Housewives	201 (31%)
Private employee	188 (29%)
Civil servants	78 (12%)
Farmers	78 (12%)
Traders	52 (8%)
Businesswomen	26 (4%)
Unemployed / retired	26 (4%)
Parity	
0-2	396 (61%)
3-4	175 (27%)
≥5	78 (12%)
Educational background	
Elementary school	201 (31%)
Junior high school	26 (4%)
Senior high school	266 (41%)
University / college	143 (22%)
No formal education	13 (2%)

The highest incidence of cervical cancer was found in parity 0 to 2 as many as 396 patients (61%), followed by parity 3 to 4 as many as 175 patients (27%), and more than 5 as many as 78 patients (12%). It was found that the highest level of education was at the high school level, namely 266 patients (41%). There were 13 (2%) patients with cervical cancer who did not attend school as shown on Table 1.

Table 2: Stage of cervical cancer

Disease stage of studysubjects	N (%)
IB1	71 (11%)
IB2	46 (7%)
II	13 (2%)
IIA1	26 (4%)
IIA2	52 (8%)
IIB	201 (31%)
IIIA	58 (9%)
IIIB	169 (26%)
IV	13 (2%)

The majority of the cervical cancer patients visited the clinic at the stage IIB (162 patients, 25%). The stage of all patients can be seen on Table 2.

Table 3: Histopathology biopsy

Histopathology biopsy	N (%)
<i>Squamous carcinoma</i>	409 (63%)
<i>Adenocarcinoma</i>	175 (27%)
<i>Adenosquamous carcinoma</i>	65 (10%)

As seen on Table 3 it was found that the most common type of cervical cancer was squamous carcinoma in 409 patients (63%) followed by adenocarcinoma in 175 patients (27%) and adenosquamous carcinoma in 65 patients (10%).

Table 4: Pap smear history

Pap Smear history	N (%)
Yes	65 (10%)
No / never	584 (90%)

The majority of cervical cancer patients who visited the obstetrics outpatient clinic of Sanglah Hospital had never examined with Pap smear before being diagnosed with cervical cancer (44 patients, 90%). Meanwhile, 5 (10%) other patients stated that they had done a Pap smear test before. Of the 5 patients, 3 patients were declared to have no malignancy on pap smear examination and 2 others showed "High Grade Squamous Intraepithelial Lesion" and "Atypical Squamous Cell Undetermined Significance (ASCUS) results". The two patients got themselves examined in the hospital after knowing the results of the pap smear.

Table 5: History of oral contraceptive use

History of using oral contraceptives	N (%)
Yes	214 (33%)
No / never	435 (67%)

There were no cervical cancer patients who visited the obstetrics outpatient clinic of Sanglah Hospital who smoked. Based on the history of oral contraceptives use, it is known that 214 (33%) cervical cancer patients had previously used oral contraceptives and as many as 435 (67%) patients had never used oral contraceptives before.

4. Discussions

The highest prevalence of cervical cancer patients was in the range of 40-49 years old. Study conducted by Kouret al. found different results with this study. On their study in 2015 found that the highest age range for cervical cancer was 50 to 69 years followed by 30 to 39 years. This is highly correlated to the mass Pap smear screening.³

A 35-year epidemiological study in the United States conducted by Adegoke et al., found that from 1973 to 2007 the highest number of cervical cancers was found in the age range of 45 to 49 years. Similar findings were also found in a study in India in 2016 where the highest incidence of cervical cancer was observed among women aged 49.7 years. According to Rita et al., the most common incidence at that age may be related to the occurrence of menopause in women (55.83% of cervical cancer patients have experienced menopause). This is similar in this study, namely the highest age range is 40 to 49 years. In addition, this is also supported by study of Sulistyawati et al., that at that age it is possible for the role of the immune system to affect organ function. A good immune system functions to block the development of cancer cells. Moreover, a study conducted by Wakwoya et al. also supports this study that the highest risk is at the age of 40-49 years, this is possibly because women at such age range rarely visit a doctor. This allows the lack of information, especially regarding cervical cancer.^{4,5,6,7}

The occupation of the patients before and during diagnosed with cervical cancer in this study were mainly housewives. This is in line with a study conducted by Sari et al. that environmental health problems tend to have a direct impact on health threats. Housewives who have a lot of time to do housework are more susceptible to infection than men, because women have a high responsibility for household chores such as cleaning to fulfilling household needs such as shopping at the market or supermarket. It is known that environmental sanitation in urban areas is associated with urbanization and population growth is a continuous threat to health. Lack of sanitation in urban areas, such as the use of public toilets which are still actively used in urban areas, has a high risk of cervical cancer in household women. The humid conditions of the toilet are a suitable place for viruses to multiply.⁸

The highest incidence of cervical cancer was found in parity 0 to 2, followed by parity of 3 to 4, then more than 5. The relationship between the number of parities with the incidence of cervical cancer remains a controversial. Rita et al. conducted a study in India and found that the majority of cervical cancer patients were multiparous and only 0.33% were nulliparous, and 1.7% had one child. Multiparity is related to poor hygiene conditions that have a major impact on the occurrence of cervical cancer supported by the menopause process. Multiparity sustain the transformation zone in the ectocervical region making it easier for HPV infection and the development of metaplastic cells that can develop into cancer. However, this contradicts the results obtained in this study. This may be related to the influence of other risk factors. The study of Munoz et al. also explained that high parity did not increase the likelihood of HIV

infection. This study also revealed that there was a weak association between high parity and the risk of cervical adenocarcinoma.^{5,9}

The finding of educational background was dominated by senior high school background. These results are different from a study in Egypt in 2018 which found that cervical cancer was more common in women who only completed elementary school compared to other levels of education. Differences in education level affect age at first intercourse and first pregnancy. Several other factors that may support this are changing partners, partner's sexual behavior and knowledge of genital hygiene. This might be due to local demographic factors. High school age is in a period of puberty, where promiscuity plays a role in the incidence of cervical cancer.^{10,11}

The majority of the cervical cancer patients visited the clinic at the stage IIB, indicating lesion that had passed through the uterus with spread to the parametrium according to FIGO classification. A study in India found that most cervical cancer patients were diagnosed at stage II based on FIGO (55.33%) followed by stage III (18.16%), stage I (2.83%) and stage IV (1.33%). This is because the onset of disturbing symptoms in patients begins to be experienced at stage II.⁵

Based on the histopathology results, it was found that the most common type of cervical cancer was squamous carcinoma, followed by adenocarcinoma and adenosquamous carcinoma. Similar to these results, Rita et al. in 2016 found that, the most histological features in cervical cancer patients in India was squamous cell carcinoma at 91.83% followed by adenocarcinoma at 3.5% and adenosquamous carcinoma at 1.67%. This is also in line with a study conducted by Anfinan in 2019. In his study, squamous cell carcinoma was found as the most common histopathology, followed by adenocarcinoma.^{5,12}

Most of patients in this study never had pap smear test history. The sensitivity of the Pap smear as an early detection for cervical cancer is around 51%, of which the false negative is around 49%. Study conducted by Karimi et al. revealed that in terms of accuracy, sensitivity, specificity and negative predictive values, colposcopy is higher than Pap-smear for detecting high-grade cervical carcinoma and other pre-malignant lesions (CIN > 2). Thus, if the patient is suspected of cervical cancer, the Pap-smear should be continued with examinations such as a biopsy to establish a more definite diagnosis so that treatment of the patient will be earlier to increase the patient's survival rate.¹³

There was no patient in this study had smoking history. The relationship between smoking and the incidence of cervical cancer has been widely discussed in other studies. Smoking is either conducted by the patient or their partners. A meta-analysis illustrated that the relative risk of patients who had smoked was 2.03 (95% confidence interval: 1.49-2.57) compared to non-smokers. Smoking is associated with an increased incidence of HPV infection and is associated with cervical intraepithelial neoplasia and invasive cervical cancer. Several factors are involved with smoking-associated cervical carcinogenesis, in particular the direct cervical carcinogenic effects and local immunosuppression.

Smoking adds to other confounding factors such as adverse psychosocial events, systemic immunity, contraception, and nutrition which makes it difficult to evaluate the direct effect of smoking on the incidence of cervical cancer.^{14,15}

In this study more patient had never used oral contraceptives before. Oral contraceptives or hormonal contraceptives are said to be a risk for cervical cancer. Paramita et al. stated that compared to women who had never used hormonal contraception, those who used hormonal contraception for 1-4 years and 5-25 years had 2 times and 4.5 times higher risk for cervical cancer, respectively. In patients who had never used oral contraceptives, the incidence tends to be higher than those who have used oral contraceptives. Considering that this study is descriptive in nature hence the association of cervical cancer prevalence with the use of oral contraceptives cannot be established, particularly when the duration of contraceptive use was unknown. As has been widely known that there has been an increased risk of cervical cancer in patients who use oral contraceptives for more than 5-6 years. Therefore, longitudinal studies examining the risk of HPV transmission and in particular the persistence of HPV through contraceptive use are urgently needed.^{16,17}

5. Conclusion

The highest prevalence of cervical cancer is observed at the age range of 40-49 years, housewives, at parity 0 to 2 as many as 396 patients (61%), and senior high school educational background. The majority of cervical cancer patients were diagnosed at stage IIB. Based on histopathological results, the most common type of cancer was squamous carcinoma. The majority of cervical cancer patients have never had a Pap smear before being diagnosed with cervical. There were no cervical cancer patients who smoked and more patients have never used oral contraceptives before.

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