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Characteristic of Cervical Cancer in Reproductive Woman (Under 40 years old) at Prof. I.G.N.G. Ngoerah Denpasar Bali from January - December 2023



Ketut Suwiyoga,¹ I Nyoman Gede Budiana,¹ I Nyoman Bayu Mahendra,¹
I Gde Sastra Winata,^{1*} Kade Yudi Saspriyana,¹ Pande Kadek Aditya Prayudi,¹
Eric Gradiyanto Ongko,² I Gusti Ayu Made Putri Hitasari,² Winty Septiani,²
I Wayan Rivandi Pradiyadnya Mardana,² Fransiscus Ronaldo,²
I Putu Bagus Mulyana Yoga²

ABSTRACT

Background: Cervical cancer caused 275,000 deaths globally, with the mortality rate up to 52%. In the past 30 years, the percentage of young women affected by cervical cancer has increased, ranging from 10% to 40%. This study aims to describe the case of cervical cancer in reproductive women in Prof Dr. I.G.N.G Ngoerah General Hospital.

Method: This is a cross-sectional retrospective descriptive study involving all cases of cervical cancer diagnosed from January to December 2023 in Prof Dr. I.G.N.G Ngoerah General Hospital. Prof Dr. I.G.N.G Ngoerah General Hospital. We included all cases of cervical cancer proven by histopathology or ultrasound reports. Data were tabulated in the table and analyzed using SPSS version 24.0.

Result: We involved 61 patients in this study, with the mean age of participants was 33.91 ± 4.98 . Most patients had two children (45.16%). Patients predominantly came with stage IIB (33.87%). Tumor size was varied, with ≤ 4 cm being more dominant (67.74%). Chemoradiotherapy was preferred for the management of cervical cancer (37.10%)

Conclusion: The characteristics of patients with cervical cancer were varied compared to the literature. Multifactorial risk factors of this disease could explain these. The management should be tailored to the clinical condition of the patient's guidance under the available consensus.

Keywords: Bali, Cervical Cancer, Denpasar, Reproductive Woman.

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¹Oncogynecology Division, Obstetrics and Gynecology Department, Prof. Dr. I. G. N. G. Ngoerah Hospital / Faculty of Medicine, Universitas Udayana, Bali, Indonesia

²Obstetrics and Gynecology Department, Prof. Dr. I. G. N. G. Ngoerah Hospital / Faculty of Medicine, Universitas Udayana, Bali, Indonesia

*Correspondence author:

I Gde Sastra Winata. Oncogynecology Division, Obstetrics and Gynecology Department, Prof. Dr. I. G. N. G. Ngoerah Hospital / Faculty of Medicine, Universitas Udayana, Bali, Indonesia. sastra@unud.ac.id

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INTRODUCTION

Cervical cancer is a cancerous growth that primarily develops in the transformation zone of the cervix. Cervical cancer caused 275,000 deaths globally, with the mortality rate up to 52%. Approximately 88% of these deaths occurred in developing countries where cervical cancer ranks as the tenth most common cancer.¹ According to data from GLOBCAN, cervical cancer is the second most common cancer among women in Indonesia after breast cancer, with approximately 32,469 cases (17.2%) and about 18,279 deaths (8.8%).² Based on the early detection summary

data of cervical cancer in Indonesia, the number of suspected cervical cancer cases in several provinces was recorded as follows: Jakarta with 269 cases, Bali with 254 cases, and Bangka Belitung with 227 cases. This data indicates that Bali is one of the regions with a high rate of cervical cancer. The prevalence of cancer in Bali Province in 2018 was 2.3 per 1000 inhabitants.³ Cervical cancer ranks as a prominent cause of cancer-related deaths among women globally, often behaving epidemiologically akin to a sexually transmitted disease of low infectivity. Screening programs significantly impact

variations in incidence between countries. Despite overall trends showing a decline in both incidence and mortality, there are indications of rising cervical cancer risks, potentially linked to shifts in sexual practices.⁴ Besides, in the past 30 years, the percentage of young women affected by cervical cancer has increased, ranging from 10% to 40%.⁴ Therefore, we wanted to discuss the demographical characteristics of cervical cancer in reproductive women, especially in our institute, Prof Dr. I.G.N.G Ngoerah General Hospital.

METHODS

This is a cross-sectional retrospective descriptive study involving all cases of cervical cancer diagnosed from January 2023 to December 2023 in Prof Dr. I.G.N.G Ngoerah General Hospital. Prof Dr. I.G.N.G Ngoerah General Hospital is a tertiary referral hospital in the capital city of Denpasar, Bali Province, Indonesia, that serves as a gynecologic oncology referral center for Bali and Nusa Tenggara region. We included all cases of cervical cancer proven by histopathology or ultrasound reports. We excluded patients who declined all kinds of interventions that we had recommended. We used total sampling as the sample collection method. Data was taken from medical records of the Obstetric and Gynecology Department, Prof Dr. I.G.N.G Ngoerah General Hospital, Bali. Data regarding the socio-demographics (age and parity), tumor staging by FIGO staging (**Figure 1**), size of the tumor, laboratory results, and type of treatment were all extracted from the medical records. The size of the tumor was assessed using radiology. Data were tabulated in the table and analyzed using SPSS version 24.0.

RESULTS

In total, we involved 61 patients in this study. The mean age of participants was 33.91 ± 4.98 , with the body mass index (BMI) was 19.8 (17.90 - 22.00). Most patients had two children (45.16%). The characteristics of the patient are shown in **Table 1**.

Patients predominantly came with stage IIB (33.87%). Tumor size was varied, with ≤ 4 cm was more dominant (67.74%). Chemoradiotherapy was preferred in the management of cervical cancer (37.10%) (**Table 2**).

DISCUSSION

Cervical cancer is a malignancy of the cervix caused by infection with high-risk oncogenic HPV groups, especially HPV 16 and 18. Globally, cervical cancer is the fourth most common cancer in women and one of the leading causes of death among women. In 2018, the global prevalence of cervical cancer was estimated at 569,000 new cases, with

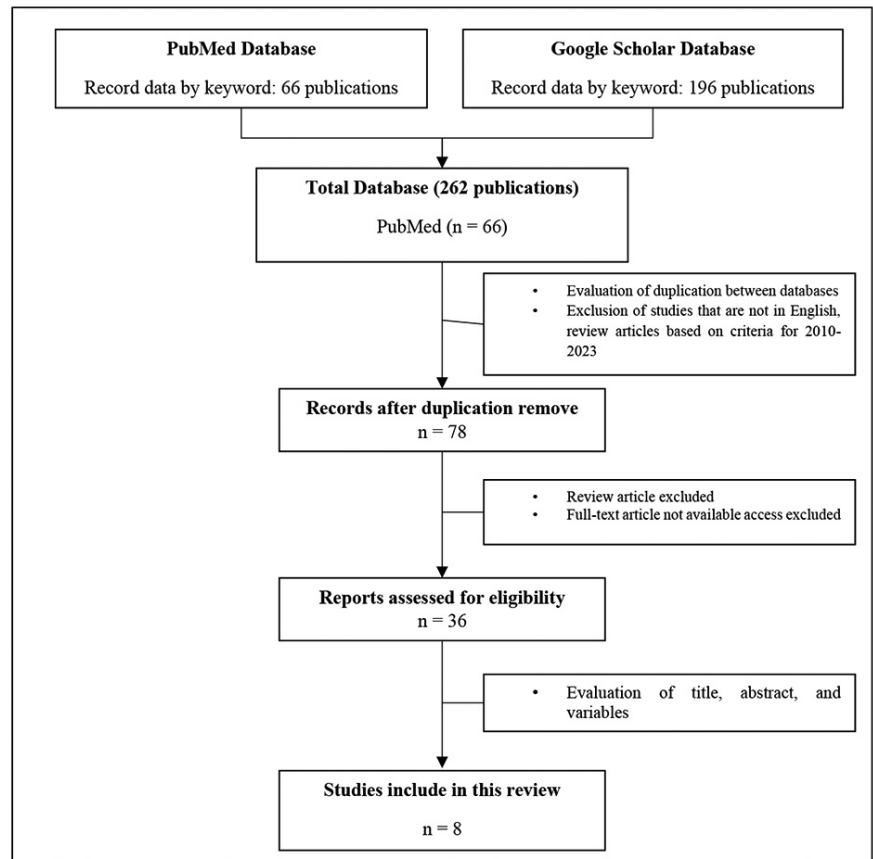


Figure 1. FIGO Staging

Table 1. Characteristics of the Patient

Variable	Frequency (%)
Age (Mean \pm SD), years old	33.91 \pm 4.98
0-30 years old	16 (25,81%)
31-40 years old	45 (72,58%)
Body Mass Index, kg/m ²	
Median (Min-Max)	19.8 (17.9 - 22.00)
Parity	
0	14 (22.58)
1	8 (12.90)
2	28 (45.16)
3	9 (14.52)
4	2 (3.23)
FIGO Staging	
ASCUS	2 (3.23)
Stage IA	0 (0)
Stage IB1	2 (3.23)
Stage IB2	4 (6.45)
Stage IB3	6 (9.68)
Stage IIA1	3 (4.84)
Stage IIA2	3 (4.84)
Stage IIC1	1 (1.61)
Stage IIB	18 (29.03)
Stage IIIA	0 (0)
Stage IIIB	21 (33.87)
Stage IVA	0 (0)
Stage IVB	1 (1.61)

311,000 deaths caused by cervical cancer. Under normal conditions, the cervix has a central canal called the endocervical canal, which contains different epithelial tissues. The outer part of the canal is lined by squamous epithelium, while the inner part of the canal is lined by columnar epithelium. Between these two epithelial layers, there is a transition zone, which is the primary site for cervical dysplasia or the occurrence of premalignant lesions.⁵

Cervical cancer is most commonly diagnosed in women aged 35 to 44, with the average age being 50. However, in the past 30 years, the percentage of young women affected by cervical cancer has increased, ranging from 10% to 40%.⁴ This data is in accordance with our result, which showed that the mean patients diagnosed were above 40 years old. Several reasons can explain this condition. First, the younger age of the initial sexual due to the cultural shift. Bali is one of the popular tourist destinations where all people from different cultures come to Bali. This might cause a cultural change in teenagers in Bali. Moreover, this could be caused by the good screening system in our health facility. However, we were not sure about this statement because the stage that we predominantly found in the first visit was stage IIIB. On the other hand, a study of cervical cancer patients aged 25 or younger found that most of them do not have a long history of sexual activity, and some have not even had their first sexual encounter. Consequently, likely, these patients have not had an HPV infection or precancerous changes for more than 5 to 10 years. Thus, we hypothesize that cervical cancer progresses more aggressively in women aged 25 or younger compared to older patients. Additionally, previous studies have typically defined young cervical cancer patients as those aged 30 or 35 and younger, with mixed prognoses reported for these age groups, where significant heterogeneity also exists.⁶

There are several risk factors involved in the development of cervical cancer, with sexual factors being the primary risk. The risk of HPV infection increases with the number of sexual partners or a history of sexual activity with multiple partners.⁷⁻¹² Besides, previous studies have shown a positive association between high parity

Table 2. Characteristic of Cancer

Variable	Frequency	Percentage
Tumor Size		
No data	5	8.06
≤ 4 cm	42	67.74
> 4 cm	14	22.58
Management		
No data	1	1.61
Chemoradiotherapy	23	37.10
Radiotherapy	4	6.45
Chemotherapy	16	25.81
Surgery	14	22.58
Surgery + Chemotherapy	3	4.84

and cervical cancer. The increased risk among women with high parity is thought to be due to a higher rate of cervical abnormalities during pregnancy, a higher detection rate of HPV in pregnant women, and local changes to cervical cells caused by trauma during childbirth. Although multiple epidemiological studies have identified parity as a risk factor for cervical cancer, the reported strength of this association varies and is inconsistent. A meta-analysis of 12 studies involving a total of 6,685 participants (3,227 patients and 3,458 controls) found that women with high parity (≥ 5) had 2.65 times higher odds of developing cervical cancer compared to those with lower parity (odds ratio = 2.65, 95% confidence interval = 2.08–3.38).⁷ However, these findings were not in accordance with our study, which showed the majority of the parity was two children. A study in the previous year in our institute also gave the same result, which predominantly by 2-3 children. These showed that other risk factors may influence the occurrence of cervical cancer in Bali.⁸

The stage of cervical cancer is defined by the International Federation of Gynecology and Obstetrics (FIGO), based clinically on tumor size and degree of tumor metastasis. FIGO staging does not assess metastasis to lymph nodes.⁹ In this study, patients predominantly came with stage IIIB. There were several reasons why we found the patient in the advanced stage. First, our institute was the center of referral from peripheral hospitals. Therefore, the cases were more complicated or could not be solved in peripheral hospitals. Second, there was a weakness in the screening

system, which made most patients come in the advanced stage.

There are several modalities used in the management of cervical cancer, including surgery, radiotherapy, chemotherapy, or combinations of these therapies. Surgical therapy is recommended for early-stage cervical cancer without risk of metastasis to other organs or lymph nodes. In stage IA1, the risk of lymph node metastasis is less than 1%, making surgery highly effective. A cone biopsy can be performed for patients desiring fertility preservation, while a hysterectomy may be suitable for those not planning to have children. In stage IA2 cervical cancer, where there is an 8% risk of lymph node metastasis, radical hysterectomy is recommended. This procedure involves resection of the uterus, cervix, parametrium, and upper part of the vagina. Radical hysterectomy can lead to long-term sequelae such as urinary dysfunction, vesicovaginal fistula, lymphocele, as well as obturator and genital neuropraxia. In addition to radical hysterectomy, modified radical hysterectomy is another option that aims to minimize the negative postoperative impacts. In a modified radical hysterectomy, the resection of the parametrium is performed more minimally, and a smaller vaginal cuff is preserved. Issues such as urinary dysfunction, sexual dysfunction, and defecation problems can occur due to disruption of the autonomic nerves in the parametrium. By performing a more minimal resection of the parametrium in a modified radical hysterectomy, the risk of these issues is expected to be reduced, thereby helping to maintain the patient's quality of life after surgery.¹ In stage IB1

cervical cancer, radical hysterectomy with pelvic and para-aortic lymphadenectomy can be performed. Additionally, treatment options include radiotherapy combined with chemotherapy using cisplatin. For stages IB2 and IIA2, radical hysterectomy with pelvic and para-aortic lymphadenectomy can also be followed by adjuvant radiotherapy or chemotherapy using cisplatin-based agents. Several studies indicate that radical hysterectomy followed by radiotherapy alone carries a high risk of recurrence. Therefore, concurrent chemoradiotherapy (CCRT) is recommended to reduce this risk. CCRT aims to improve local control and decrease the likelihood of cervical cancer recurrence after treatment.¹⁰ Cervical cancer at more advanced stages without metastasis (IIB-IVA) has a significantly poorer prognosis compared to stages IA and IB. For advanced-stage cervical cancer, concurrent chemoradiotherapy (CCRT) is recommended. Research shows that CCRT can increase survival rates by 6% compared to radiotherapy alone. Chemotherapy can be used in patients with cervical cancer stages IIB-IVA with favorable outcomes. Research indicates that radiotherapy using external beam radiotherapy followed by brachytherapy, along with chemotherapy using a regimen of cisplatin and gemcitabine, can improve progression-free survival, overall survival, and time to disease progression.¹¹ In this study, there were several types of surgery, such as trachelectomy radical, total abdominal hysterectomy, radical hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic node dissection, bilateral ovarian transposition, hysterectomy, salpingo-oophorectomy, or combinations of this surgery. The

decision was based on the patient's clinical condition. Chemoradiation was also chosen as our initial management because of the limited radiation facility in our institute. While the patient was waiting for her turn to have radiation, we started also to give chemotherapy.

CONCLUSION

From this study, we can conclude that the characteristics of patients with cervical cancer were varied compared to the literature. Multifactorial risk factors of this disease could explain these. On the other hand, the management should be tailored to the clinical condition of the patient guidance under the available consensus.

DISCLOSURES

Conflict of Interest

All authors have no conflicts of interest.

FUNDING

No funding was received for the study.

ETHICAL STATEMENT

Not applicable.

AUTHOR CONTRIBUTION

All authors contributed equally to this study.

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