

Clinicopathological Characteristics of Cervical Carcinoma with Pelvic Lymph Node Metastases in Dr. Hasan Sadikin General Hospital, Bandung Year 2013–2021

Henny Sri Rejeki,¹ Sri Suryanti,¹ Anglita Yantisetiasti,¹ Kemala Isnainiasih Mantilidewi,² Gatot Nyarumenteng Adhipurnawan Winarno²

¹Department of Pathological Anatomy, Faculty of Medicine Universitas Padjadjaran/Dr. Hasan Sadikin General Hospital, Bandung, Indonesia²Department of Obstetrics and Gynecology, Faculty of Medicine Universitas Padjadjaran/Dr. Hasan Sadikin General Hospital, Bandung, Indonesia

Abstract

Background: Carcinoma of the cervix is the most common gynecological malignancy, which ranks first among carcinomas in Indonesia. Lymph node metastasis is a risk of recurrence, affecting survival and therapy. The purpose of this study was to determine the clinicopathological characteristics of cervical carcinoma with pelvic lymph node metastasis that had undergone radical hysterectomy and lymphadenectomy at Dr. Hasan Sadikin General Hospital, Bandung.

Methods: This study used a cross-sectional retrospective descriptive study. Data on the clinical stage I–II cervical cancer patients with pelvic lymph node metastasis were collected from the archives of the pathological anatomy laboratory during period from 2013 to 2021. Data were presented in percentage.

Results: There were 64 data patients, and the most common age of cervical carcinoma ranged from 40 to 50 years old (52%), the most common stage was stage II (66%), and the most frequent histopathological type was squamous cell carcinoma (70%). The highest degree of differentiation was moderate differentiation (50%). There was no difference in tumor size between sizes <4 cm and ≥4 cm.

Conclusions: The cases of cervical carcinoma at Dr. Hasan Sadikin General Hospital Bandung are treated with radical hysterectomy and lymphadenectomy. The patients generally aged between 41–50 years old, stage II, and squamous cell carcinoma with a moderate degree of differentiation.

Keywords: Cervical carcinoma, metastase, pelvic lymph node

Introduction

Based on data from the Global Cancer Statistics (GLOBOCAN) 2020, the incidence of cervical cancer has reached 604,127 new cases with a mortality rate of 341,831 cases each year.¹ The mortality rate occurs about 90% of deaths in low to middle-income countries. In Indonesia, the number of new cases of cervical cancer in 2020 was 3,425 cases and was ranked first in the incidence of female reproductive tumors based on the Indonesia Society of Gynecologic Oncology (INASGO).²

The distribution of cervical cancer from INASGO for 2020 metastase 2021 based on the FIGO stage of cervical cancer was 12.1%, 31.4%, 50.5%, and 4.9% for stages I, II, III, and IV, respectively.² The prognosis for stage

IA and IIA cervical cancer is 80% and 63%, respectively.³

The survival rate of patients who are free of metastases is about 81.5%.⁴ A study among French population showed that about 15% of cervical cancer patients with metastases could survive up to 5 years.⁵ High risks prognostic factors associated with poor post-operative survival rates include lymph node metastases, parametrial extension, lympho vascular invasion, depth of stromal invasion, histologic type, differentiation, tumor size, and age. Among the prognostic factors, the worst is lymph node metastases.^{6,7}

This study aimed to determine the characteristics of cervical carcinoma patients with lymph node metastasis at Dr. Hasan Sadikin General Hospital, Bandung.

Correspondence: Henny Sri Rejeki, dr, Department of Pathological Anatomy, Faculty of Medicine Universitas Padjadjaran/Dr. Hasan Sadikin General Hospital, Jalan Pasteur 38, Bandung, Indonesia, E-mail: hennysrirejeki@gmail.com

Methods

This study used a cross-sectional observational descriptive method. The population were patients with cervical cancer who had undergone radical hysterectomy and lymphadenectomy and had been diagnosed histopathologically from 2013 to 2021 at Dr. Hasan Sadikin General Hospital Bandung, Indonesia.

Data including on age, stage, type of histology, degree of differentiation, and tumor size were collected from the histopathological anatomical pathology laboratory archive and medical records.

The level of differentiation applied only to squamous cell carcinoma (SCC) and adenocarcinoma. Cervical carcinoma was diagnosed through histopathological examination to confirm the definitive diagnosis. The examination was characterized by morphology, pattern, nuclear pleomorphism, and mitotic activity.⁸

The data were presented in numbers and percentages for categorical variables. This research received ethical approval from the Research Ethics Committee of Universitas Padjajaran number: 728/UN6.KEP/EC/2021.

Results

In total, 64 data were retrieved. From cases of cervical carcinoma with pelvic lymph node metastases at Dr. Hasan Sadikin General Hospital Bandung from 2013 to 2021, the highest incidence of cervical carcinoma with

Table 1 Characteristics of subjects

Characteristics	n (%)
Age (years)	
<40	20 (31)
40-50	33 (52)
51-60	8 (12)
>60	3 (5)
Stage	
I	22 (34)
II	42 (66)
Histopathology type	
Squamous cell carcinoma	45 (70)
Adenocarcinoma	10 (16)
Adenosquamous carcinoma	5 (8)
Clear cell carcinoma	3 (5)
Neuroendocrine carcinoma	1 (1)
Grading	
Well-differentiated	7 (11)
Moderate	32 (50)
Poorly differentiated	16 (25)
Non-grading	9 (14)
Size of tumour	
<4 cm	32 (50)
≥4 cm	32 (50)

pelvic lymph node metastases was found in 2018 (Figure 1).

The average age of patients was 40-50 years (52%, n=33) (Table 1). The youngest patient in this study was 29 years old, suggesting an association with the main etiology of the disease, namely HPV infection, which was related to sexual activity. In this study there

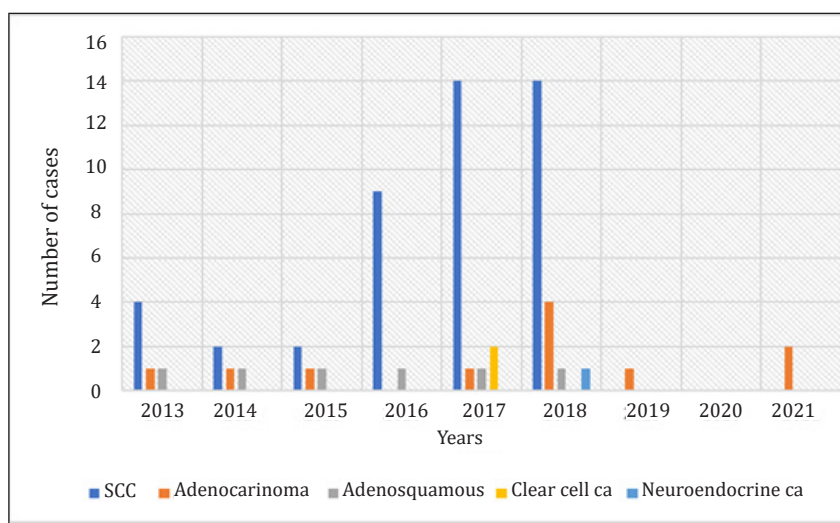


Figure 1 Incidence of Cervical Carcinoma with Pelvic Lymph Node Metastases in Dr. Hasan Sadikin, Bandung in 2013-2021

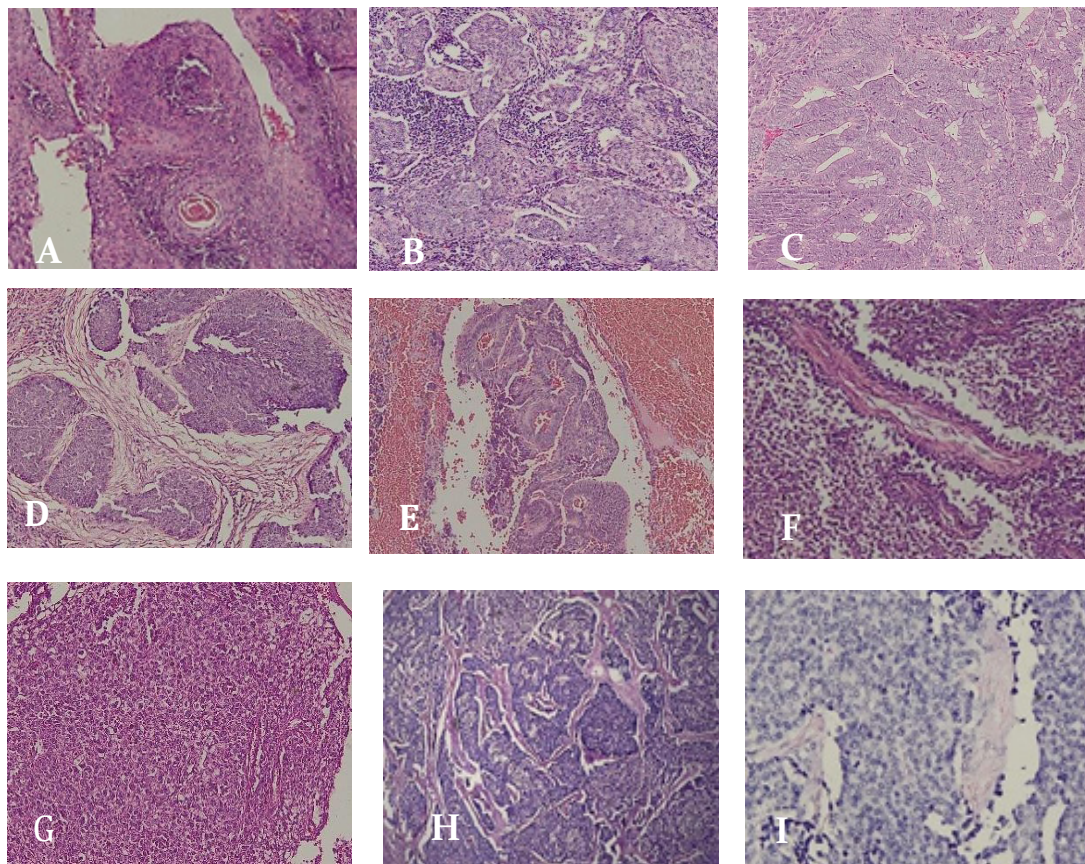


Figure 2 Histopathological Appearance of Carcinoma Cervix Uteri

Note: A) Keratinizing squamous cell carcinoma (SCC), B) Non-Keratinizing SCC, C) Adenocarcinoma, D) Adenosquamous carcinoma, squamous differentiation E) Adenosquamous carcinoma, glandular differentiation, F) Clear cell carcinoma, hobnail appearance, G) Clear cell carcinoma, tumour is composed of cells with clear to pale eosinophilic cytoplasm, H) Neuroendocrine carcinoma, nested pattern, I) Neuroendocrine carcinoma, cells with scant cytoplasm and hyperchromatic nuclei

was only one elderly patient (>65 years). The most common stage was stage II (66%). The most frequently found histopathological type was squamous cell carcinoma (70%; n=45). The highest grading of differentiation was moderate differentiation (50%; n=32). There was no difference in tumor size between sizes <4 cm and \geq 4 cm.

The most common histopathology type was squamous cell carcinoma (70%) (Figure 2A&B), followed by adenocarcinoma (16%) (Figure 2C), adenosquamous (8%) (Figure 2D&E), clear cell carcinoma (5%) (Figure 1F&G) and neuroendocrine carcinoma (2%) (Figure 2H&I).

Discussion

In this study, most cases of cervical carcinoma with pelvic lymph node metastases are found

at the age of 40–50 years. This result is in line with data from the International Agency for Research on Cancer (IARC) that cervical cancer is most often found in women aged >45 years old.⁸ Data from INASGO in 2021 revealed that cervical cancer was most found at the age of 36–55 years.^{2,21} Therefore, the incidence of cervical SCC in young adult women <30 years is very rare.^{19,20} Age is one of the factors that affect the prognosis of patients and the maturity of the immune system in the body. This is related to the ability of immunity which increases and will slowly decrease, especially at a rather advanced age.⁹

The most common type of histopathology is squamous cell carcinoma (SCC). These results are almost the same as those found by another study which shows that the prognostic survival rate in patients with early-stage cervical cancer is 74%, 22%,

and 4% for squamous, adenocarcinoma and adenosquamous carcinoma types.¹⁰ Another study in Jakarta found that in 2006–2010, in 2,297 cases of cervical cancer, the histopathological distribution was 57.6%, 12.4%, 8.4% and 0.5% rates for squamous cell carcinoma, adenocarcinoma, adenosquamous cell carcinoma, and clear cell carcinoma, respectively.¹¹

In addition, another result showed that the frequency of positive pelvic nodes by histology was three-fold higher in squamous carcinoma than in adenocarcinoma.¹² Some studies reported that adenocarcinoma has a worse prognosis than squamous cell carcinoma.^{13–16} However another research reported that there was no difference regarding the survival rate of the patients based on the histopathological type of adenocarcinoma versus squamous cell carcinoma.¹⁷

Based on the characteristic of the stage, almost all patients were classified into stage II (early stage). This is in accordance with the therapeutic guidelines issued by the Ministry of Health of the Republic Indonesia concerning the National Guidelines for Cervical Cancer Management Medical Service, that definitive therapy in the form of surgery is carried out in the early stage of cervical cancer.³

Tumor size is closely related to the risk of lymph node metastases. Another finding showed a worse prognosis in cervical cancer patients with tumor size ≥ 4 cm compared to cervical cancer patients with tumor size < 4 cm.¹⁸ Other research shows similar data in this regard.^{22,23} With recurrence rates of 86.6% and 45.1%, respectively. Cancer patients with the lower clinical stage (stage IB) have a slower recurrence rate than patients with advanced cancer stage ($>$ stage IB).¹⁸

The staging of cervical cancer is based on the International Federation of Gynaecology and Obstetrics (FIGO) stage. There have been revisions of FIGO 2009 and FIGO 2018. In FIGO 2009 the determination of pelvic lymph node metastases was determined after definitive therapy (radical hysterectomy and pelvic lymphadenectomy) and did not affect the stage. FIGO 2018 set one of the parameters to determine staging, namely pelvic lymph node metastases (determined based on imaging or histopathology examination). Based on FIGO 2018, cervical cancer with pelvic lymph node metastases was diagnosed as stage IIIC1. The 2018 FIGO stage allows pelvic lymph node metastases to be determined before definitive therapy is carried out so that it can affect the therapy given to the patient.

Definitive therapy according to the 2021 National Comprehensive Cancer Network (NCCN) guidelines for stage IIIC1 cervical cancer (pelvic lymph node metastases) is pelvic External Beam Radiation Therapy and brachytherapy. Based on the changes in the 2018 FIGO stage and the 2021 NCCN guidelines, it is hypothesized that this is the cause of the decreased incidence of cervical cancer with pelvic lymph node metastases undergoing radical hysterectomy and pelvic lymphadenectomy from 2019 to 2021.

There are several limitations in this study such as the study was conducted at a single center. The risk factors that could be regarded as confounding factors such as smoking, long-term oral contraceptive use, and human papillomavirus (HPV) infection are not studied.

In conclusion, patients with cervical cancer at Dr. Hasan Sadikin General Hospital, Bandung in period 2013 to 2021 mostly occur in the age range of 40–50 years, stage II, subtypes squamous cell carcinoma, and a moderate degree of differentiation.

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