| Research Report |

Distribution of Age, Stage, and Histopathology of Cervical Cancer: A Retrospective Study on Patients at Dr. Cipto Mangunkusumo Hospital, Jakarta, Indonesia, 2006-2010

Distribusi Usia, Stadium, dan Histopatologi Kanker Serviks: Studi Retrospektif pada Pasien Rumah Sakit Umum Pusat Nasional Dr. Cipto Mangunkusumo, Jakarta, Indonesia, 2006-2010

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Abstract

Objective: To review the distribution of age, stage at presentation, and histology of cervical cancer at Dr. Cipto Mangunkusumo Hospital.

Materials and methods: This cross sectional study involved 2297 subjects with cervical cancer at Dr. Cipto Mangunkusumo Hospital and registered at the Cancer Registration Information System during 5 years period from January 2006 to December 2010. Histotype was confirmed by histopathology examination. The International Federation of Gynecology and Obstetrics (FIGO) classification was used to stage the disease.

Result: The mean age of cervical cancer patients was 51.42 years old (SD 9.694, range 21 - 85). The highest incidence was in 35 - 64 years (87.3%), with the peak incidence in 40 - 59 years (71.3%). There were 0.4 % patients identified at stage IA1, 0.1% at stage IA2, 7.3% at stage IB1, 4.9% at stage IB2, 10.5% at stage IIA, 17.3% at IIB, 1.7% at stage IIIA, 50.2% at stage IIIB, 4.3% at stage IVA, 3.2% at stage IVB. Of the 2297 patients, 70.2% had epidermoid carcinoma, 15.1% had adenocarcinoma, 10.2% had adenosquamous, 0.6% had clear cell, 3.9% had other types.

Conclusion: A large proportion of cervical cancer (76.7%) presented in advanced stage (≥ stage IIB). The highest incidence (57.8%) was in the age range 45 - 59 years. Squamous cell carcinoma is the most frequent histopathology type (70.2%), followed by adenocarcinoma (15.1%) and adenosquamosa (10.2%). A lack of effective screening programs aimed at detecting and treating precancerous conditions is a key reason for the high incidence of cervical cancer at advanced stage.

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Keywords: cervical cancer, age, stage, histopathology

Abstrak

Tujuan: Untuk mengetahui distribusi usia, stadium, dan jenis histopatologi kanker serviks di Rumah Sakit Dr. Cipto Mangunkusumo.

Bahan dan cara kerja: Penelitian secara retrospektif melibatkan 2297 subjek yang didiagnosis kanker serviks di Rumah Sakit Dr. Cipto Mangunkusumo dan teregistrasi dalam Cancer Registration Information System selama 5 tahun mulai dari Januari 2006 sampai Desember 2010. Jenis histologi dikonfirmasi dengan pemeriksaan histopatologi. Klasifikasi stadium menggunakan klasifikasi dari The International Federation of Gynecology and Obstetrics (FIGO).

Hasil: Rerata usia pasien dengan kanker serviks adalah 51,42 tahun (SD 9,694; 21 - 85 tahun). Sebagian besar insidens terjadi pada kelompok usia 35 - 64 tahun (87,3%), dengan puncak pada kelompok usia 40 - 59 tahun (71,3%). Pasien terdiagnosis pada stadium IA1 sebesar 0,4%, stadium IA2 sebesar 0,1%, stadium IB1 sebesar 7,3%, stadium IB2 sebesar 4,9%, stadium IIA sebesar 10,5%, stadium IIB sebesar 17,3%, stadium IIIA sebesar 1,7%, stadium IIIB sebesar 50,2%, stadium IVA sebesar 4,3%, stadium IVB sebesar 3,2%. Sebaran stadium didapatkan data sebagai berikut: karsinoma sel skuamosa 70,2%, adenokarsinoma 15,1%, adenoskuamosa 10,2%, clear cell carcinoma 0,6%, dan 3,9% pasien mempunyai jenis lain.

Kesimpulan: Sebagian besar insidens kanker serviks (76,7%) berada pada stadium lanjut (≥ stadium IIB). Sebesar 57,8% kasus terjadi pada usia 45 - 59 tahun. Karsinoma sel skuamosa merupakan tipe histopatologi yang paling sering (70,2%), diikuti adenokarsinoma (15,1%), dan adenoskuamosa (10,2%). Belum efektifnya program skrining yang ditujukan untuk mendeteksi dan menatalaksana kondisi prekanker merupakan penyebab tingginya insidens kanker serviks pada stadium lanjut.

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Kata kunci: kanker serviks, usia, stadium, histopatologi

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INTRODUCTION

Cervical cancer is the second most common cancer among women worldwide.[1] Worldwide, cervical cancer claims the lives of 231,000 women annually.[2] It is an important public health problem among adult women in large areas of the developing world where an estimated 80% of new cases arise.[1,2] This cancer accounts for only 3.6% of new cancer in developed countries. The incidence is lower in developed countries because well-developed screening programs had led to an important decline of cervix cancer incidence and mortality rates during 40 last years.[3] Despite ad-

vances in the detection and management, cervical cancer continues to be a significant health problem on a world-wide scale.[4]

In a developing country like Indonesia, the availability of limited information on disease incidence is an impediment to program planning and evaluation that are required for prevention and control of disease. The knowledge about the incidence of the disease will be useful to point the right target for screening. Besides screening, analysis of trends in invasive cervical cancer incidence may prove useful in order to understand the changing pattern of risk factor exposure in subsequent generation.

The objective of this study is to have a preview of the disease in Dr. Cipto Mangunkusumo Hospital, especially the distribution of age, stage at presentation, and histopathology of patients presenting with carcinoma of the cervix, where scarcity of data has caused hindrance in designing projects for prevention and early detection of disease. Hence it is of great significance to analyze the new trends about clinical features of cervical cancer in Indonesia.

METHODS

The cross sectional study retrospectively conducted on 2297 cervical cancer patients registered in Cancer Registration Information System during a 5-year period, starting from January 2006 to December 2010. Histotype was confirmed by histopathology examination. The International Federation of Gynecology and Obstetrics (FIGO) classification was used to stage the disease. The research data is processed using SPSS software 14.00.

RESULT

According to data obtained from cancer registration information system in Dr. Cipto Mangunkusumo Hospital from January 2006 to December 2010 (Table 1), there were 2297 cases of cervical cancer. Of 2297 patients, the mean age was 51.42 years old (SD 9.694) with the age range was 21 to 85 years. The highest incidence was at 50 - 54 years old (20.5%) and 45 - 49 years old (20.3%), and followed by 55 - 59 years old (17%). This three groups encompassed half of all cervical cancer cases recorded.

Table 1. Distribution of age groups of cervical cancer in Dr. Cipto Mangunkusumo Hospital Year 2006 - 2010.

Age	Frequency	Percent	Valid Percent	Cumulative Percent
20 - 24	6	0.3	0.3	0.3
25 - 29	19	0.8	0.8	1.1
30 - 34	52	2.3	2.3	3.4
35 - 39	158	6.9	6.9	10.2
40 - 44	311	13.5	13.5	23.8
45 - 49	466	20.3	20.3	44.1
50 - 54	471	20.5	20.5	64.6
55 - 59	391	17.0	17.0	81.6
60 - 64	210	9.1	9.1	90.7
65 - 69	123	5.4	5.4	96.1
70 - 74	57	2.5	2.5	98.6
75 - 79	23	1.0	1.0	99.6
80 - 84	10	0.4	0.4	100.0
Total	2297	100.0	100.0	

One-hundred and thirty-four cases did not mention the stage of cancer in the system register (Table 2). While on the remaining cases, stadium IIIb is the highest incidence at the time of diagnosis (50.2%). Early stages only consisted 23.3% of the cases.

Table 2. Distribution of cervical cancer stage in Dr. Cipto Mangunkusumo Hospital Year 2006 - 2010.

Stage	Frequency	Percent	Valid Percent	Cumulative Percent
IA1	9	0.4	0.4	0.4
IA2	3	0.1	0.1	0.6
IB1	158	6.9	7.3	7.9
IB2	106	4.6	4.9	12.8
IIA	228	9.9	10.5	23.3
IIB	375	16.3	17.3	40.6
IIIA	36	1.6	1.7	42.3
IIIB	1085	47.2	50.2	92.5
IVA	94	4.1	4.3	96.8
IVB	69	3.0	3.2	100.0
Total	2163	94.2	100.0	
No data	134	5.8		
Total	2297	100.0		

Table 3. Distribution of cervical cancer histotypes in Dr. Cipto Mangunkusumo Hospital year 2006 - 2010.

	Frequency	Percent	Valid Percent	Cumulative Percent
Other (eg. Anaplastic)	73	3.2	3.9	3.9
Squamous Cell Carcinoma	1322	57.6	70.2	74.0
Adenocarcinoma	285	12.4	15.1	89.2
Adenosquamous Carcinoma (Mucoepidermoid)	192	8.4	10.2	99.4
Clear Cell Carcinoma (Mesonephroid Tumor)	12	0.5	0.6	100.0
Total	1884	82.0	100.0	
No data	413	18.0		
Total	2297	100.0		

There were 413 cases that had no data about the histopathology. The remaining cases showed that squamous cell carcinoma was the most frequent type of cervical cancer histopathology (70.2%). Clear cell carcinoma was the least one (0.6%).

DISCUSSION

The clinical presentation pattern of cervical cancer will help us to identify the appropriate age group for cervical cancer screening.[5] In our study, the age ranged from 21 to 85 years old, with the mean age of 51.42 years (SD 9.649) and the highest incidence in the age group of 45 - 59 years. In 2002, other study in Indonesia showed that the highest incidence was in the age group of 55 - 64 years and followed by the age group of 45 - 54 years.[6] The comparison of these two studies showed that there is a little change in the age of cervical cancer patients. Our study found that cervical cancer was higher at younger ages compared to the previous study. This might be caused by screening programs that has been promoted more broadly than the previous term. The mean age in this study corresponded to the mean age found by Missaoui et al[4] (2010) in Tunisia and Badar et al[7] at moslem community. The mean age of those studies were 52.1 and 49.2 years old, respectively.

In the other hand, recently, many studies at developed countries showed the increase in cervical cancer incidence at younger age.[8-11] Cervical cancer incidence at younger age may be contributed by early exposure of sexual activity, early menarche, multiple sex partner, sexual promiscuity, HPV infection, a high incidence of sexual transmitted disease, smoking, and oral contraception.[12,13] Other factor that contributes the earlier finding is screening programs in developed countries which have been carried out sufficiently, allowing early detection of cervical cancer at early stage.[9] A study in Morroco showed the mean age was 44.8 years old.[4] England and Wales also reported a decline cervical cancer incidence in the age group of 45 - 64 years and 55 - 64 years and a significant increase in younger age groups, 35 - 39 years and 40 - 44 years. Switzerland, another country with a successful screening programs, especially at 20 - 44 years old, reported a decrease in cervical cancer incidence in 30 - 64 years old group.[11]

The difference in the mean age and the highest age group incidence of cervical cancer patients between our study and studies in countries with sufficient screening programs showed that the screening programs in Indonesia have not been conducted sufficiently. The existence of cervical cancer diagnosed in post-menopausal age showed that cervical cancer screening should not be stopped in menopausal age. There was a report that women who are screened every three years before 50 years, did not develop cervical cancer, but women who did not undergo regular screening, may still develop cervical cancer after the age of 50.[14]

In our study, 70.2% of cervical cancer patients were detected at advanced stage. This result relatively has not changed since previous study carried out in 1997 - 1998 in Dr. Cipto Mangunkusumo Hospital which stated that 67.5% of cervical cancer patients came to the hospital at advanced stage.[15] This data showed that the screening programs has not been carried out sufficiently because the majority of cervical cancer patiens were detected at advanced stage. Our result were similar to characteristics that were found in other developing countries. A study in Tunisia[4] show-ed 33.6% patients were diagnosed at stage 0 and 1 and 58.2% patients were diagnosed at stage II to stage IV. In Pakistan[7], 33.4% patients were diagnosed at stage II and 21.5% were diagnosed at stage III. In countries where screening programs have well developed, e.g Canada and Scandinavia, cervical cancer incidence was relative low.[16]

The incidence of cervical cancer in Dr. Cipto Mangunkusumo Hospital, that most cases were diagnosed in advanced stage, showed the lack of cervical cancer screening. With screening initiation, the incidence in Indonesia will result in earlier stage during detection.

From this study, we found squamous cell carcinoma (epidermoid) as the most common histopathologic type of cervical cancer (70.2%), followed by adenocarcinoma (15.1%), adenosquamous carcinoma (10.2%), clear cell carcinoma (0.6%) and other types (3.9%). The high incidence of squamous cell carcinoma was consistent with several other studies, for example Bhurgri et al[5] who reported the following: squamous cell carcinoma in 86.5% patients, adenocarcinoma in 10.9%, and adenosquamous carcinoma in 2.6%. In addition, a study in Turkey also reported squamous cell carcinoma (89.1%) as the most common histologic findings.[17] In 1995, Shingelton et al also found a similar result; 83.8% cases of cervical cancer were squamous cell carcinoma, 12.6% were adenocarcinoma, and the remaining 3.6% were other cancers.[18]

In the recent studies, there was a tendency of an increased proportion of adenocarcinoma incidence compared to squamous cell carcinoma and cervical cancer in general.[7,10,19-21] Shingleton et al[18] reported an increased frequency of adenocarcinoma among all types of cervical cancer, from 7% in the period of 1974 - 1978 to 19% in 1979 - 1980. The incidence of cervical cancer in Dr. Cipto Mangunkusumo Hospital showed a tendency of an increased adenocarcinoma incidence compared to squamous cell carcinoma. This probability should be further investigated in the future.

CONCLUSION

Our study showed that cervical cancer patients were most commonly diagnosed in the age 45 - 59 years old, not much different with the peak incidence of the same age group in other developing countries. The majority of cervical cancer patients were diagnosed in late stage, most commonly IIIB. Therefore, this data shows that the screening program was not conducted effectively and suggests that screening should not stop at menopausal age. The cervical cancer-screening program requires adequate financial, structural, and human resources support. These requirements may be a burden to a developing country like Indonesia.

The higher incidence of adenocarcinoma in our study compared to studies in other nations should be

further studied in the future. This is important, considering the worse prognosis of adenocarcinoma compared to other types of cervical cancer.

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