A ten-year retrospective study on the survival outcomes among post-hysterectomy cervical cancer patients*

By Roxanne Uy Rivera, MD, FPOGS and Lilli May T. Cole, MD, FPOGS, FSGOP
Section of Gynecologic Oncology and Trophoblastic Diseases, Department of Obstetrics and Gynecology, Jose R. Reyes Memorial Medical Center

ABSTRACT

Background: Cervical cancer is the most common gynecologic malignancy in the Philippines despite being a preventable disease. Radical hysterectomy with pelvic lymphadenectomy is considered the standard surgical treatment of choice for patients with cervical cancer confined to the cervix up to the upper vagina. However, recent studies show that a less radical approach can be offered to these patients with comparable outcomes to radical hysterectomy, but with lesser perioperative and post-operative morbidity.

Objectives: The purpose of this study was to compare the outcomes in terms of recurrence and survival among cervical cancer patients who underwent simple hysterectomy and radical hysterectomy seen in a tertiary government hospital.

Methods: The records of all cervical cancer patients who underwent radical hysterectomy and simple hysterectomy for the past ten years were reviewed.

Results: The incidence of cervical cancer patients who underwent simple hysterectomy from 2009-2018 is 0.37 per 100 person years or 0.592:16, lower than 1:16 ratio from 1964-1974, as reported by Manalo and Sotto.[1] Only 9 out of 42 patients who underwent simple hysterectomy had cervical cancer screening within 1 year prior to surgery.

Conclusion: The most common indication for surgery was myoma uteri. Those who underwent radical hysterectomy had better recurrence free survival and overall survival than those who had simple hysterectomy.

Keywords: Cervical Cancer, Simple Hysterectomy, Radical Hysterectomy

INTRODUCTION

Cervical cancer remains to be the second most common malignancy and is the most common cause of cancer-related mortality among Filipino women, with rapidly increasing incidence and reported mortality.[2] Despite being a preventable disease, the increasing rate of cervical cancer in the Philippines can still be attributed to poor cervical cancer screening practices.[3]

The optimal treatment for cervical cancer consists of either a radical hysterectomy and pelvic lymphadenectomy or radiotherapy with or without chemotherapy. Comparable rates of survival are obtained when regimens are initiated in early stage disease, regardless of which treatment modality is utilized. Chemotherapy and radiotherapy are given to advanced cases that are deemed inoperable.[4] For patients with International Federation of Gynecology and Obstetrics (FIGO) stage IA2 to IIA1 and not desirous of pregnancy, with good surgical risk, radical hysterectomy with pelvic lymphadenectomy is still the accepted standard surgical procedure.[5] Radical hysterectomy involves removal of the uterus, cervix, en bloc with the tissues surrounding the uterus and cervix called the parametria and the upper one third to one half of the vagina. This corresponds to class III of the Piver-Rutledge type of hysterectomy or type C2 of the Querleu and Morrow classification.[6] Radical hysterectomy remains the surgery of choice for cervical cancer patients because it results in excellent local tumor control. However, radical hysterectomy is often associated with significant morbidity such as genitourinary, bowel and sexual dysfunction. It was always been believed that simple hysterectomy is a suboptimal procedure for cervical cancer and it is significantly associated with inferior survival rates. However, currently several studies reported otherwise. A less radical approach may be done to cervical cancer patients. According to these studies, cervical cancer patients identified as low-risk for local metastasis may benefit from simple hysterectomy.[7,8]

*Third Place, 2019 POGS-MULTICARE Fellow's Research Paper Contest, November 12, 2019, Philippine International Convention Center (PICC), Pasay City

It is based on this premise that this study was conceptualized. This retrospective study investigated the incidence and outcomes of cervical cancer patients seen in a tertiary government hospital after undergoing simple hysterectomy mostly for a benign indication, as compared to those who had radical hysterectomy.

OBJECTIVES

General Objective

The aim of this study is to determine and compare the incidence and survival outcomes of cervical cancer patients who underwent simple and radical hysterectomy seen in a tertiary government hospital.

Specific Objectives

1. Determine and compare the incidence, 5 year - recurrence free survival and 5 year - overall survival of patients who underwent simple hysterectomy and radical hysterectomy.
2. Determine if the following prognostic factors such as patient's age, time interval from simple hysterectomy to initiation of adjuvant treatment, stage, tumor size, LVSI and margins are associated to the tumor recurrence and overall survival of patients who underwent simple hysterectomy.
3. Determine if the following prognostic factors such as patient's age, time interval from simple hysterectomy to initiation of adjuvant treatment, stage, tumor size, LVSI and margins are associated to the tumor recurrence and overall survival of patients who underwent radical hysterectomy.
4. Determine if the different prognostic factors between those who underwent simple hysterectomy and radical hysterectomy have a signigficant difference in the 5 – year recurrence free survival and 5 – year overall survival.

MATERIALS AND METHODS

Subjects

Inclusion Criteria

All cervical cancer cases seen at the out patient department who underwent simple hysterectomy and radical hysterectomy with squamous cell carcinoma, adenocarcinoma and adenosquamous carcinoma histology from January 1, 2009 to December 31, 2018.

Exclusion Criteria

1. All patients with neuroendocrine, clear cell, carcinosarcoma, adenosarcoma, leiomyosarcoma and adenoma malignum histology.
2. All patients that were lost to follow-up, incomplete adjuvant treatment and incomplete patient data.
3. Patients with microinvasive disease (stage IA1) who had simple hysterectomy since it is already an adequate treatment for such stage.
4. Patients who were given neoadjuvant treatment, either by radiation, chemotherapy or both prior to hysterectomy.
5. Patients who had subtotal hysterectomy.

Research Design

This is a single-center retrospective cohort study comparing those who underwent simple hysterectomy and radical hysterectomy seen from January 1, 2009 to December 31, 2018.

Data Collection

Chart review of patients diagnosed with cervical cancer from January 1, 2009 to December 31, 2018 were reviewed. Out of 2,545 cervical cancer cases, there were a total of 183 cervical cancer patients who underwent hysterectomy from January 1, 2009 to December 31, 2018. Of these, 56 had simple hystectomy and 127 had radical hysterectomy. Of the 56 patients who had simple hysterectomy, 2 cases of neuroendocrine tumor and 1 case of leiomyosarcoma of the cervix were excluded from the study. Likewise, 3 have incomplete data, 1 started adjuvant treatment but did not complete it and was lost to follow-up, 6 refused adjuvant treatment and were lost to follow-up, and 1 had subtotal hysterectomy and was given concurrent chemoradiation post-operatively. A total of 42 patients were included in the study for the simple hysterectomy arm. Of the 127 patients who underwent radical hysterectomy, 5 are of poor histologic types, 12 were lost to follow-up, and 61 were given neoadjuvant chemotherapy and/or radiotherapy prior to hysterectomy. Only 49 patients were included in the radical hysterectomy arm.

Prognostic Factors

Age

The age used in this study was based on the patient's age at the time of surgery and not at the time of consult.

Interval of Surgery to Adjuvant Treatment

The time interval was reported in months. It is based on the date of the surgery up to the first day when adjuvant treatment was intiated, either in the form of radiotherapy, chemotherapy or both.

Stage

The patients in this study were staged using the 2009 FIGO staging for cervical cancer.

Tumor Size, LVSI, Margins

The tumor size used in this study was the largest dimension reported on the patient's histopathology

report. Likewise, positive LVSI is defined as presence of malignant cells on either a blood vessel, lymphoid vessel, or both as reported in the patient's histopathology report. Positive margin is defined as presence of tumor at the lines of resection either at the parametria and/or surgical margins and/or less than 1 cm vaginal cuff tumor free margin.[9]

Statistical Analysis

Frequency and percentage were used to compute for the Incidence Rate of both groups. Chi-square test was used to determine the association of the prognostic factors to the recurrence free survival and overall survival. Risk ratio was computed to determine the effect of each factor to the recurrence free survival and overall survival. Kaplan Meier graph was used to illustrate the significant models at each survival months. Z-test of proportion was also used to compare the overall survival and recurrence rate of the patients who underwent simple hysterectomy and radical hysterectomy. SPSS version 24.0 was used for data analysis. Null hypotheses were rejected at 0.05 alpha level of significance.

RESULTS

Demographics

A total of 91 patients were included in the study. Of these, 42 had simple hysterectomy and 49 had radical hysterectomy. Of the 42 patients under the simple hysterectomy arm, 26 had squamous cell carcinoma histology and 16 had adenocarcinoma. For the radical hysterectomy arm, 31 were diagnosed with squamous cell carcinoma histology, 17 had adenocarcinoma and 1 had adenosquamous carcinoma.

The mean age of patients who had simple hysterectomy was 48.6 years old while the mean age of patients who underwent radical hystectomy was 42.2 years old.

For patients who underwent simple hysterectomy, the most common presenting symptom was vaginal bleeding (26) followed by pelvic pain (7), vaginal discharge (4), pelvic mass (3) and cervical mass (2). Patients diagnosed with cervical cancer who underwent radical hysterectomy presented with vaginal bleeding (30), vaginal discharge (11), hypogastric pain (4) and cervical mass (4).

The following were the benign gynecologic indications for simple hysterectomy: uterine myoma (17), cervical myoma (7), ovarian new growth or cysts (4) and endometrial or endocervical polyp (5). Nine had simple hysterectomy for a biopsy proven malignancy pre-operatively.

Out of 42 patients, only 9 had screening for cervical cancer within 1 year prior to hysterectomy. However all these 9 patients had normal cervical cytology results. For patients diagnosed with cervical cancer, 17 had cervical cancer screening either by cytology or visual inspection with acetic acid (VIA) within 1 year prior to diagnosis. Of these 17 patients, 6 had positive VIA, 1 showed low grade intraepithelial lesion (LSIL) and 2 showed high grade intraepithelial lesion (HSIL) on cervical cytology. Eight patients had normal cervical screening result.

For the cervical cancer stage, 31 patients under the simple hysterectomy arm were stage I disease, while 7 were staged as stage II disease and 4 were in stage III. For those who underwent radical hysterectomy, 46 were in stage I while 3 were in stage II.

For the tumor size, 9 patients under the simple hysterectomy arm had tumors less than or equal to 2 cms and 33 had tumor more than 2 cms. For those who had radical hysterectomy, 13 patients had tumor less than or equal to 2 cms, while 36 had tumor size of more than 2 cms.

Nine patients under the simple hysterectomy arm were positive for lymphovascular space invasion while 16 patients under the radical hysterectomy arm turned out positive for lymphovascular space invasion.

Twelve patients who had simple hysterectomy had positive margins while none of the patients under the radical hysterectomy arm had positive margins.

Seventeen patients who had simple hysterectomy had locoregional recurrence (40.5%) and 6 had distal recurrence (14.3%). For those who had radical hysterectomy, 5 had locoregional recurrence (10.2%) and 2 had distal recurrence (4.1%) (Table 1).

Incidence

The incidence for cervical cancer who had simple hysterectomy was 0.37 per 100 person-years while the incidence of those who had radical hysterectomy was 0.43 per 100 person-years (Table 2).

Recurrence Free Survival

There was a significant difference (p-value 0.004) between the recurrence free survival rate of those who had simple hysterectomy (34.4%) compared to those who had radical hysterectomy (73.4%). This means that those who had radical hysterectomy are less likely to have recurrence within 5 years as compared to those who had simple hysterectomy (Table 3).

Overall Survival

There was also a significant difference (p-value 0.041) between the overall survival rate of those who had simple hysterectomy (50.0%) compared to those who had radical hysterectomy (73.9%). This means that those who had radical hysterectomy are more likely to be alive within

Table 1. Demographic characteristics and prognostic factors of patients who underwent simple hysterectomy and radical hysterectomy.

Prognostic Factors	Simple Hysterectomy	Radical Hysterectomy
Age (Mean)	48.6 years old	42.2 years old
Histology		
SCCA	26	31
Adenocarcinoma	16	17
Adenosquamous Carcinoma	0	1
Presenting Symptom		
Vaginal bleeding	26	30
Vaginal Discharge	4	11
Hypogastric Pain	7	4
Cervical Mass	2	4
Pelvic Mass	3	0
Indication		
Uterine Myoma	17	-
Cervical myoma	7	-
Endometrial polyp	3	-
Endometrial cancer	5	-
Cervical cancer	4	49
ONG	4	-
Cervical polyp	2	-
Cervical Cancer Screening		
Yes	9	17
No	33	32
Stage		
I	31	46
II	7	3
III	4	0
Size		
≤ 2 cms	9	13
> 2 cms	33	36
LVSI		
Positive	9	16
Negative	33	33
Margins		
Positive	12	0
Negative	30	49
Recurrence		
None	19	42
Locoregional	17	5
Distal	6	2

Table 2. Incidence Rate of SH and RH

	Total number of cases	Total Number of Cervical Cancer Cases in 10 years	Total number of months	Incidence Rate
SH	42	2,545	660	0.37 per 100 person-years
RH	49	2,545	660	0.43per 100 person years

Table 3. 5 Year Recurrence Free Survival and Overall Survival of SH and RH

Survival Outcomes	Simple Hysterectomy	Radical Hysterectomy	P-Value
Recurrence Free Survival	34.4%	73.4%	0.004
Overall Survival	50%	73.9%	0.041

5 years from diagnosis as compared to those who had simple hysterectomy (Table 3).

Prognostic Factors

For patients who underwent simple hysterectomy, age, disease stage, lymphovascular space invasion and margins has no significant association to the recurrence free survival and overall survival (Table 4).

There was a significant association between the interval of surgery to the initiation of adjuvant treatment in terms of recurrence free survival (P<0.05). Patients who initiated adjuvant treatment within 1 to 2 months were 61.14 times more likely to have no recurrence than those who had adjuvant treatment more than 6 months from the time of surgery. Patients who started adjuvant treatment within 3 to 4 months were 45.341 times more likely to have no recurrence than those who started adjuvant treatment for more than 6 months. Therefore, the longer the interval from the time of surgery to the initiation of adjuvant treatment, the lower the recurrence free survival. Likewise, for overall survival, there was a significant association between interval of surgery to initiation of adjuvant treatment and overall survival (P<0.05). Patients who had adjuvant treatment within 1 to 2 months were 24.279 times more likely to survive than those who started treatment for more than 6 months.

For tumor size, patients who have had tumor size ≤ 2 cms were 22.706 times more likely to have no recurrence than those with tumor size of more than 2 cms. In terms of overall survival, tumor size ≤ 2 cms were 23.845 times more likely to survive than those with tumor size of more than 2 cms.

For those patients who had radical hysterectomy, there was no significant association between age, interval of surgery to initiation of adjuvant treatment, disease stage, tumor size lymphovascular space invasion and margins to the recurrence free survival and overall survival (Table 5).

Comparing the prognostic factors between those who underwent simple hysterectomy and radical hysterectomy, significant differences were noted in the recurrence free survival between those who underwent simple hysterectomy and radical hysterectomy in terms of interval of surgery to adjuvant treatment, tumor size, LVSI and

Table 4. Association of Prognostic Factors to RFS and OS of patients who underwent SH

Overall Survival		RFS			OS		
		With Recurrence N = 23	W/o Recurrence N = 19	OR (95% CI)	Alive N = 27	Dead N = 15	OR (95% CI)
AGE	< 40	4 (17.4%)	3 (15.8%)	0.585 (0.024 - 14.567)	2 (7.7%)	4 (26.7%)	7.333 (0.346 - 155.43)
	≥40	19 (82.6%)	16 (84.2%)		14 (53.8%)	22 (146.7%)	
Interval	1 to 2	1 (4.3%)	5 (26.3%)	61.144 (3.375 - 1107.748)*	1 (3.8%)	11 (73.3%)	24.279 (1.614 - 365.323)*
	3 to 4	5 (21.7%)	2 (10.5%)	45.341 (2.03 - 1012.864)*	1 (3.8%)	5 (33.3%)	12.42 (0.822 - 187.737)
	5 to 6	15 (65.2%)	2 (10.5%)	3.052 (0.152 - 61.087)	4 (15.4%)	3 (20%)	1.390 (0.124 – 15.529)
	>6	2 (8.7%)	10 (52.6%)		10 (38.5%)	7 (46.7%)	
STAGE	I	17 (73.9%)	14 (73.7%)	0.279 (0.008 - 9.584)	11 (42.3%)	20 (133.3%)	3.75E+07
	II	5 (21.7%)	2 (10.5%)	0.372 (0.004 - 36.487)	4 (15.4%)	3 (20%)	1.321E+07
	III	1 (4.3%)	3 (15.8%)		1 (3.8%)	3 (20%)	
TUMOR SIZE	<=2	7 (33.3%)	2 (9.5%)	22.706 (1.505 – 342.661)*	8 (30.8%)	1 (6.3%)	23.845 (1.688 – 336.900)*
	>2	14 (66.7%)	19 (90.5%)		18 (69.2%)	15 (93.8%)	
LVSI	Positive	4 (17.4%)	5 (26.3%)	1.484 (0.126 - 17.5)	13 (50%)	20 (133.3%)	1.375 (0.128 - 14.726)
	Negative	19 (82.6%)	14 (73.7%)		3 (11.5%)	6 (40%)	
MARGINS	Positive	6 (26.1%)	6 (31.6%)	1.443 (0.035 - 60.138)	12 (46.2%)	18 (120%)	2.12E-15
	Negative	17 (73.9%)	13 (68.4%)		4 (15.4%)	8 (53.3%)	

margins favoring the radical hysterectomy arm. Likewise, significant difference was also noted in the overall survival of the two groups in terms of the interval of surgery to adjuvant treatment and tumor size. Age and stage had no significant difference in terms of recurrence free survival and overall survival between the two groups (Table 6).

Table 5. Association of Prognostic Factors to RFS and OS of patients who underwent RH.

Overall Survival		RFS			OS		
		W/o Recurrence N = 42	With Recurrence N = 7	RR (95% CI)	OS N = 43	Non-OS N = 6	RR (95% CI)
AGE	< 40	20 (47.6%)	1 (14.3%)	5.647 (0.519 - 61.438)	20 (46.5%)	1 (16.7%)	4.601 (0.406 - 52.093)
	≥40	22 (52.4%)	6 (85.7%)		23 (53.5%)	5 (83.3%)	
Interval	1 to 2	25 (59.5%)	3 (42.9%)	1.797 (0.159 - 20.379)	26 (60.5%)	2 (33.3%)	0.643 (0.041 - 10.097)
	3 to 4	12 (28.6%)	2 (28.6%)	1.518 (0.111 - 20.811)	12 (27.9%)	2 (33.3%)	0.546 (0.029 - 10.095)
	5 to 6	1 (2.4%)	0 (0%)		1 (2.3%)	0 (0%)	1.20E+06
	>6	4 (9.5%)	2 (28.6%)		4 (9.3%)	2 (33.3%)	
STAGE	I	39 (92.9%)	7 (100%)	7.75E-07	40 (93%)	6 (100%)	5.38E-07
	II	3 (7.1%)			3 (7%)	0 (0%)	
TUMOR SIZE	<=2	12 (28.6%)	1 (14.3%)	1.701 (0.15 - 19.255)	12 (27.9%)	1 (16.7%)	1.549 (0.13 - 18.391)
	> 2	30 (71.4%)	6 (85.7%)		31 (72.1%)	5 (83.3%)	
LVSI	Positive	11 (26.2%)	5 (71.4%)	6.703 (0.897 - 50.121)	11 (25.6%)	4 (66.7%)	5.786 (0.725 - 46.188)
	Negative	31 (73.8%)	2 (28.6%)		31 (72.1%)	2 (33.3%)	
MARGINS	Negative	42 (100%)	7 (100%)	-	43 (100%)	6 (100%)	

Table 6. Comparison of Survival Outcomes between SH and RH with Prognostic Factors.

	RFS		P-value	OS		P-value
	SH	RH		SH	RH	
Age						
< 40 YO	82.60%	90.90%	0.242	88.20%	93.90%	0.492
>=40 yo	85.24%	92.30%	0.285	82.38%	90.70%	0.244
Interval						
1 to 2	44.44%	65.38%	**0.046**	26.09%	65.38%	**0.002**
3 to 4	95.70%	97.80%	0.570	94.10%	97.00%	0.755
5 to 6	78.30%	88.50%	0.191	76.50%	87.50%	0.437
>6	43.50%	66.00%	**0.032**	35.30%	59.40%	0.179
Tumor Size						
<= 2	77.78%	92.31%	**0.050**	88.89%	92.31%	0.577
>2	42.42%	83.33%	**0.001**	54.55%	86.11%	**0.001**
LVSI						
Positive	82.60%	90.90%	0.242	82.60%	90.90%	0.492
Negative	26.10%	51.10%	**0.016**	17.60%	42.00%	0.126
Margins						
Positive	73.90%	86.00%	0.149	76.50%	87.50%	0.386
Negative	34.80%	59.00%	**0.022**	23.50%	48.50%	0.148
Stage						
I	78.27%	87.97%	0.217	76.47%	86.83%	0.202
II	78.30%	88.50%	0.191	76.50%	87.50%	0.437
III	95.70%	97.80%	0.571	94.10%	97.00%	0.756

Comparing those with the same time intervals of surgery to adjuvant treatment, those who underwent radical hysterectomy had better recurrence free survival and overall survival as compared to those who had simple hysterectomy. For patients with tumor size of ≤ 2 cms, those who underwent radical hysterectomy had better recurrence free survival but no significant difference was noted on the overall survival. For patients with tumor size of > 2 cms, those who underwent radical hysterectomy had better recurrence free survival and overall survival. For patients with negative LVSI and margins, those who underwent radical hysterectomy had better recurrence free survival than those who underwent simple hysterectomy. However no significant difference was noted in the overall survival of the two groups.

DISCUSSION

Cervical cancer usually occurs in women between 35-44 years old as in our study.[10] Screening for cervical cancer was not done prior to hysterectomy for an indicated benign indication. This finding was similar to the study done by Castellano, et al, where it was concluded that the most common cause of incidental cervical cancer at the time of simple hysterectomy was failure to properly adhere to screening guidelines. Less frequently, false-negative screening was the cause.[11]

The most common indication presenting symptom is still vaginal bleeding and the most common indication was myoma uteri, as reported by Manalo and Sotto on a study on inadequately staged cervical cancer.[1]

Among those who underwent simple hysterectomy, the most significant finding was the interval of initiation of adjuvant treatment from the time of surgery and tumor size. The earlier the adjuvant treatment was given, the higher the recurrence free survival and overall survival. In a study by You, et. al., time interval between surgery and adjuvant treatment was an independent predictor of disease free survival and overall survival.[12] Likewise, tumor size of 2 cms or less have better recurrence free survival and overall survival among those who underwent simple hysterectomy as compared to those with more than 2 cms tumor size.

Ramirez and Pareha argue that a less radical approach can be done for low risk early stage cervical cancer. Low risk patients are those with histology of squamous cell carcinoma, adenocarcinoma or adenosquamous carcinoma, tumor size of 2 cms or less, stromal invasion < 10mm and no LVSI.[13] In a study by Pluta et al, results showed patients with negative sentinel lymph nodes can benefit from simple hysterectomy, avoiding the possible bowel and bladder complications brought about by radical hysterectomy.[14] In another retrospective study, the incidence of parametrial involvement on low-risk early stage cervical cancer patients were low, concluding that a less radical approach may be done on this population.[15]

These recent studies has brought about in question the role of radical hysterectomy for early stage cervical cancer. However, a review of 4,885 women with stage IB1-IIA cervical cancer in SEER database showed that radical hysterectomy is superior to primary radiation for the treatment of cervical cancer less than 6 cms, especially for those less than 4 cms.[16] These showed that radical hysterectomy has substancial benefit to patients with early stage disease.

Cervical cancer spreads mostly through extension to the nearby tissues and the lymphatics. In our study, patients who underwent simple hysterectomy had more locoregional and distal recurrence as compared to those who underwent radical hysterectomy. Radical hysterectomy removes more of the surrounding tissues, providing excellent local tumor control resulting to better recurrence free survival and overall survival.

Our study showed that radical hysterectomy is still superior than simple hysterectomy in terms of overall survival and recurrence free survival. For those patients who had simple hysterectomy, early initiation of adjuvant treatment will improve the patient's survival outcome.

SUMMARY AND CONCLUSION

Based on this study, few patients are being screened for cervical cancer prior to hysterectomy for a benign condition. Cervical cancer patients still benefited from radical hysterectomy by having better recurrence free survival and overall survival as compared to those who had simple hysterectomy. Among cervical cancer patients who had simple hysterectomy, prompt referral to a gynecologic oncologist for immediate initiation of adjuvant treatment must be done to improve survival outcomes. The earlier the initiation of adjuvant treatment, the longer the recurrence free state and overall survival.

LIMITATION OF THE STUDY

This study has a small sample size. The type of the adjuvant therapy given among the patients were not analyzed separately as some patients were given active chemotherapy only, radiation only (either pelvic beam radiation therapy or brachytherapy or both) and there are those who were given both chemotherapy with radiotherapy.

RECOMMENDATIONS

A prospective study can be done comparing those identified with low risk factors, comparing their survival outcomes. Other prognostic factors can also be included such as presence stromal invasion, residual tumor and presence of lymph node metastasis. Risk factors for cervical cancer can also be included such as smoking, number of sexual partners, age of coitarch and oral contraceptive pill use. ■

REFERENCES

1. Manalo A and Sotto L, Inadequate surgery for invasive cancer of the cervix uteri, Philippine Journal of Obstetrics and Gynecology, Vol 1, No. 1, pp 7-13, November 1976.

2. Bray F, Ferlay J, Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA cancer J. Clin*. 2018 Nov; 68(6):394-424. doi:10.3322/caac.21492. *Epub*. 2018 Sep 12.

3. Domingo E, Dy Echo AV, Epidemiology, prevention and treatment of cervical cancer in the Philippines. *J Gynecol Oncol*, Vol 20, No. 1:11-16, March 2009.

4. Society of Gynecologic Oncologists of the Philippines (Foundation), Inc. Clinical Practice Guidelines. 8th Edition – Updated for Members. February 2019.

5. Bhatla N, et. al., FIGO Cancer Report 2018. Cancer of the cervix uteri. *Int J Gynecol Obstet.* 2018; 143(Suppl.2): 22-36. doi:10.1002/ijgo.12611.

6. Kasamatsu T, Ishikawa M, Identifying selection criteria for non-radical hysterectomy in FIGO stage IB cervical cancer. *J Obstet Gynaecol*, Res. Vol 45, No. 4: 882-891, April 2019

7. Schmeler K, et. al, Conservative management in early stage cervical cancer: Is there a role for less radical surgery? *Gynecologic Oncology 120.* 2011:321-325, September 2010.

8. Landoni F, Maneo A, Cormio G, et al, Class II versus class III radical hysterectomy in stage IB – IIA cervical cancer: A prospective randomized study, Gynecologic Oncology 80, 3-12 (2001) doi:10.1006/gyno.2000.6010, available online at http://www.idealibrary.com on Ideal

9. Society of Gynecologic Oncologists of the Philippines (Foundation), Inc. Clinical Practice Guidelines, 8th Edition – Updated for Members, February 2019.

10. American Cancer Society. Cancer Facts and Figures 2019. https://www.cancer.org/cancer/cervical-cancer/about/key-statistics.html

11. Castellano T, Ding K, Moore K, et al, Simple hysterectomy for cervical cancer: risk factors for failed screening and deviation from screening guidelines, *Journal of Lower Genital Tract Disease*. April 2019. 23(2):124-128.

12. You KY, Zhou XH, Jiang YH, The selection of time interval between surgery and adjuvant therapy in early stage cervical cancer, *Int J Gynecol Cancer*. 2018 Sep; 28(7):1325-1332.

13. Ramirez P, Pareja R et, al, Management of low risk early stage cervical cancer: should conization, simple trachelectomy or simple hysterectomy replace radical surgery as the new standard treatment of care? *Journal of Gynecologic Oncology* 132 (2014), 254-259.

14. Pluta M, Rob L, Charvat M, Less radical surgery than radical hysterectomy in early stage cervical cancer – a pilot study, *Gynecologic Oncology 113*. 2009; 181-184.

15. Schmeler K, et al, Conservative management of early stage cervical cancer: Is there a role for less radical surgery, *Journal of Gynecologic Oncology 120*. 2011); 321-325.

16. Bansal N, Herzog, Shaw RE, Burke WM, DeutschI, Wright JD. Primary therapy for early-stage cervical cancer: radical hysterectomy vs. radiation. *Am J Obstet Gynecol*. 2009 Nov; 201(5):485. E1-9.