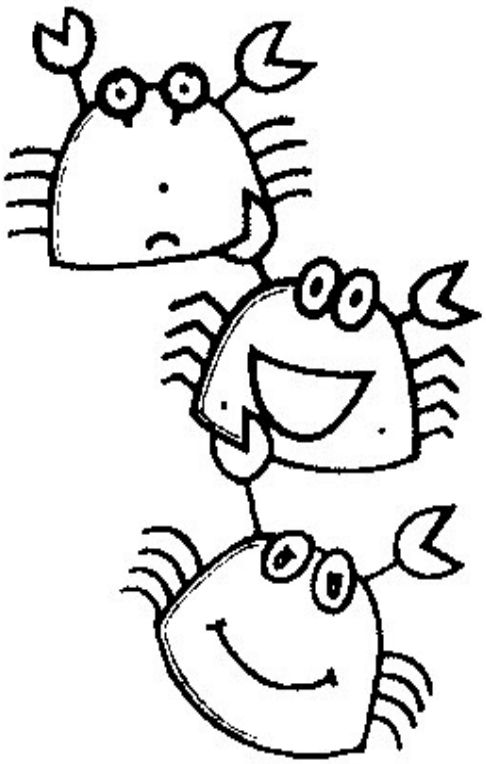
ANNUAL REPORT
ON
GYNECOLOGIC ONCOLOGY
2019



DIVISION OF GYNECOLOGIC ONCOLOGY

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

FACULTY OF MEDICINE, CHIANG MAI UNIVERSITY

CHIANG MAI, THAILAND

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GYNECOLOGIC ONCOLOGY

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CHIANG MAI, THAILAND

WEBSITE : http://www.med.cmu.ac.th/dept/obgyn/Unit/onco/oncofront.htm

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คุณอรทัย ใบใส

คุณธนรัฐ เมืองมูล

PREFACE

One major field of our Department of Obstetrics and Gynecology is the Gynecologic Oncology Division that serves the major of gynecologic cancer patients from the Northern part of Thailand. Many elective fellows visited this unit every year.

This annual report 2019 was summarized their hard-working in last year. It included the number of each gynecologic cancer, the operative procedure and the researches. Cervical cancer is still the leading cancer followed by the uterine cancer and ovarian cancer. Many of specialized operations especially pelvic lymphadenectomy by Natural orifice transluminal endoscopic **surgery** (**NOTES**) were done with the impressive outcome. Furthermore, 14 publications were published in the well-known journals.

With the leader team, Assoc. Prof. Kittipat Charoenkwan, I admired him and his colleague for their hard work to the Gynecologic Oncology Division of Chiang Mai University Hospital.

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PREFACE

The Gynecologic Oncology Annual Report 2019 summarizes our activities over the year. In summary, we managed more than 400 women suffering from various types of gynecologic cancers. Similar to the previous year, half of these patients had cervical cancer while uterine cancer and ovarian cancer in combination contributed almost equally to 40% of all the cases. This information implies that carcinoma of the uterine cervix followed by uterine corpus, and ovary continue to play a dominant role when malignancies of the female genital tract are considered.

This report is divided into two sections. The first section provides overview from the Gynecologic Cancer Registry of Chiang Mai University and detailed, organ-specific epidemiological data. The second section describes the infrastructure of our division and our academic contribution including international publications and abstract presentations.

I would like to express my sincere gratitude to Mrs. Narisa Sribanditmongkol and Mrs. Sopida Fanchomphu for their excellent work on gathering data for and editing this publication. Also, I am thankful to Ms. Sukanya Yanunto and Ms. Orathai Baisai for their hard work and great help on data collection and database maintenance. In addition, I would like to acknowledge the kind help and collaboration of our colleagues in Radiation Oncology, Gynecologic Pathology, Medical Oncology, Urology, Gastrointestinal/Colorectal Surgery, and Nursing departments. Furthermore, I deeply appreciate my Gynecologic Oncology colleagues and fellows for their perseverance and dedication. Without their determination, our mission would not be possible. Finally, a special word of thankfulness goes to Professor Jatupol Srisomboon, founding member and senior consultant of our division, and Associate Professor Prapaporn Suprasert, chairman of the department of Obstetrics and Gynecology for their unwavering support.

Associate Professor Kittipat Charoenkwan, MD, MSc
Chief, Division of Gynecologic Oncology
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TABLE 1: Gynecologic Oncology Registry: Chiang Mai University 1997-2019

Site	1997 Number (%)	1998 Number (%)	1999 Number (%)	2000 Number (%)	2001 Number (%)	2002 Number (%)	2003 Number (%)	2004 Number (%)	2005 Number (%)	2006 Number (%)
Cervix	547 (75.3)	483 (72.9)	497 (75.3)	502 (71.3)	500 (70.8)	521 (69.7)	624 (71.7)	532 (66.9)	525 (66.4)	488 (66.8)
Ovary	87 (12.0)	83 (12.5)	82 (12.4)	96 (13.6)	90 (12.7)	110 (14.7)	111 (12.8)	126 (15.8)	121 (15.3)	114 (15.6)
Corpus	48 (6.6)	47 (7.1)	49 (7.4)	56 (8.0)	63 (8.9)	61 (8.2)	67 (7.7)	89 (11.2)	97 (12.3)	84 (11.5)
Vulva	20 (2.7)	21 (3.2)	15 (2.2)	29 (4.1)	23 (3.3)	25 (3.3)	29 (3.3)	22 (2.8)	19 (2.4)	15 (2.1)
Vagina	11 (1.4)	10 (1.5)	3 (0.5)	2 (0.3)	9 (1.3)	6 (0.8)	12 (1.4)	5 (0.6)	4 (0.5)	5 (0.7)
FT	-	2 (0.3)	3 (0.5)	5 (0.7)	3 (0.4)	4 (0.5)	6 (0.7)	5 (0.6)	4 (0.5)	7 (1.0)
PPA	-	-	2 (0.3)	1 (0.1)	-	2 (0.3)	7 (0.8)	3 (0.4)	4 (0.5)	6 (0.8)
GTT	14 (1.9)	16 (2.4)	8 (1.2)	13 (1.9)	18 (2.6)	19 (2.5)	14 (1.6)	13 (1.6)	17 (2.1)	12 (1.6)
Total	**727 (100)**	**662 (100)**	**660 (100)**	**704 (100)**	**706 (100)**	**748 (100)**	**870 (100)**	**795 (100)**	**791 (100)**	**731 (100)**

PPA = Primary Peritoneal Adenocarcinoma FT = Fallopian Tube GTT = Gestational Trophoblastic Tumors

TABLE 1: Gynecologic Oncology Registry: Chiang Mai University 1997-2019 (continued)

Site	2007 Number (%)	2008 Number (%)	2009 Number (%)	2010 Number (%)	2011 Number (%)	2012 Number (%)	2013 Number (%)	2014 Number (%)	2015 Number (%)	2016 Number (%)
Cervix	480 (63.6)	473 (63.2)	436 (58.1)	449(64.2)	387(57.1)	345 (57.9)	285 (54.8)	297 (58.3)	244 (52.6)	251 (52.5)
Ovary	132 (17.5)	115 (15.2)	141 (18.8)	105 (15.0)	118 (17.5)	86 (14.4)	85 (16.3)	87 (17.1)	85 (18.3)	69 (14.4)
Corpus	91 (12.0)	117 (15.4)	116 (15.5)	94 (13.4)	114 (16.9)	106 (17.8)	109 (21.0)	92 (18.1)	93 (20.0)	110 (23.0)
Vulva	11 (1.5)	21 (2.8)	24 (3.2)	21 (3.0)	16 (2.4)	27 (4.5)	24 (4.6)	11 (2.2)	15 (3.2)	22 (4.6)
Vagina	6 (0.7)	7 (0.9)	7 (0.9)	12 (1.7)	11 (1.6)	5 (0.8)	2 (0.4)	2 (0.4)	2 (0.4)	3 (0.6)
FT	7 (0.9)	4 (0.5)	4 (0.5)	6 (0.9)	3 (0.4)	4 (0.7)	3 (0.6)	7 (1.4)	11 (2.4)	11 (2.3)
PPA	11 (1.5)	7 (0.9)	8 (1.1)	-	5 (0.7)	8 (1.3)	4 (0.8)	6 (1.2)	4 (0.9)	4 (0.8)
GTT	17 (2.3)	15 (2.0)	14 (1.9)	12 (1.7)	22 (3.3)	15 (2.5)	8 (1.5)	7 (1.4)	10 (2.2)	8 (1.7)
Total	**755 (100)**	**759 (100)**	**750 (100)**	**699 (100)**	**676 (100)**	**596 (100)**	**520 (100)**	**509 (100)**	**464 (100)**	**478 (100)**

PPA = Primary Peritoneal Adenocarcinoma FT = Fallopian Tube GTT = Gestational Trophoblastic Tumors

TABLE 1: Gynecologic Oncology Registry: Chiang Mai University 1997-2019 (continued)

Site	2017 Number (%)	2018 Number (%)	2019 Number (%)
Cervix	256 (51.2)	213(51.8)	224(51.3)
Ovary	90 (18.0)	71(17.3)	66(15.1)
Corpus	102 (20.4)	88(21.4)	112(25.6)
Vulva	20 (4.0)	19(4.6)	13(3.0)
Vagina	5 (1.0)	1(0.2)	3(0.7)
FT	9 (1.8)	14(3.4)	9(2.1)
PPA	2 (0.4)	2(0.5)	1(0.2)
GTT	16 (3.2)	2(0.5)	7(1.6)
Others	-	1(0.2)	2(0.5)
Total	**500 (100)**	**411(100)**	**437(100)**

Gynecologic Oncology Multiple Primary Cancers: Chiang Mai University 2002-2019

Multiple Primary Cancers	2002 Number	2003 Number	2004 Number	2005 Number	2006 Number	2007 Number	2008 Number	2009 Number	2010 Number	2011 Number	2012 Number
Ovarian and Cervical Cancer	**2**	**1**	**1**	**1**	**-**	**-**	**1**	**-**	**-**	**-**	**-**
Ovarian and Corpus Cancer	**7**	**-**	**5**	**13**	**5**	**4**	**8**	**5**	**7**	**4**	**4**
Corpus and Cervical Cancer	**1**	**-**	**-**	**1**	**-**	**1**	**-**	**-**	**-**	**-**	**-**
Corpus and Fallopian Tube Cancer	**1**	**-**	**-**	**-**	**1**	**-**	**-**	**1**	**1**	**-**	**1**
Corpus and Peritoneal Cancer	**-**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Corpus and Choriocarcinoma	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**
Cervical and Fallopian Tube Cancer	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Ovarian and Fallopian Tube	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**1**	**-**	**-**
Ovarian and Fallopian Tube and Corpus Cancer	**-**	**-**	**-**	**-**	**1**	**1**	**-**	**-**	**1**	**-**	**-**
Cervical and Vulva Cancer	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**1**
Corpus and Colon Cancer	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**
Corpus and Bladder cancer	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**
Cervix and Ileal cancer	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**

Gynecologic Oncology Multiple Primary Cancers: Chiang Mai University 2002-2019

Multiple Primary Cancers	2013 Number	2014 Number	2015 Number	2016 Number	2017 Number	2018 Number	2019 Number
Ovarian and Cervical Cancer	-	1	-	-	-	-	-
Ovarian and Corpus Cancer	4	4	3	5	2	3	-
Ovarian and Colon Cancer	-	-	-	-	-	-	1
Corpus and Cervical Cancer	-	1	-	-	2	-	1
Corpus and Fallopian Tube Cancer	-	1	-	-	-	-	1
Corpus and Peritoneal Cancer	-	-	-	-	-	-	-
Corpus and Choriocarcinoma	-	-	-	-	-	-	-
Cervical and Fallopian Tube Cancer	-	-	-	-	-	-	-
Ovarian and Fallopian Tube	-	-	-	-	1	1	-
Ovarian and Fallopian Tube and Corpus Cancer	-	-	-	1	-	-	-
Cervical and Vulva Cancer	-	-	-	-	-	-	-
Corpus and Bladder cancer	-	-	-	-	1	-	-
Cervix and Bladder cancer	-	-	-	-	-	-	1

Operations and Procedures in Gynecologic Oncology

Operations and Procedures	1997 Number	1998 Number	1999 Number	2000 Number	2001 Number	2002 Number	2003 Number	2004 Number	2005 Number	2006 Number
Surgery for Ovarian & Tubal Cancer	64	43	64	70	45	69	88	79	80	111
Surgery for Corpus Cancer	33	28	26	36	43	39	47	60	75	53
Surgery for Vulvar Cancer	10	14	5	19	12	14	21	19	14	12
Radical hysterectomy*	55	77	113	120	116	135	150	151	149	143
Laparoscopic Radical Hysterectomy*	-	-	-	-	-	-	-	4	18	21
Radical Parametrectomy*	2	2	1	1	1	3	4	1	1	2
Laparoscopic Radical Parametrectomy*	-	-	-	-	-	-	-	1	1	3
Extrafascial Hysterectomy	118	110	155	182	121	89	43	35	52	55
Total Laparoscopic Hysterectomy		-	-	-	-	-	10	11	9	4
CKC	66	65	79	13	14	22	16	9	10	5
LEEP	61	35	166	207	194	221	380	276	261	309
Cryosurgery	20	15	18	8	4	3	1	-	2	-
Colposcopy	227	235	463	371	369	306	357	399	499	627

*** with pelvic lymphadenectomy**

CKC = Cold Knife Conization

LEEP = Loop Electrosurgical Excision Procedure

Operations and Procedures in Gynecologic Oncology (continued)

Operations and Procedures	**2007** Number	**2008** Number	**2009** Number	**2010** Number	**2011** Number	**2012** Number	**2013** Number	**2014** Number	**2015** Number	**2016** Number
Surgery for Ovarian & Tubal Cancer	89	95	115	87	117	103	88	92	105	82
Surgery for Corpus Cancer	80	106	83	87	96	94	100	81	72	110
Surgery for Vulvar Cancer	8	21	18	20	14	17	20	28	15	28
Radical Hysterectomy*	120	121	103	125	89	71	58	57	55	58
Modified Radical Hysterectomy*	-	-	18	12	17	12	7	10	9	6
Abandoned Hysterectomy*	-	-	1	1	3	7	2	2	2	2
Radical Parametrectomy*	1	-	1	-	2	2	-	2	1	1
Laparoscopic Surgical Staging for Corpus Cancer	-	-	-	6	4	3	2	5	4	4
Laparoscopic Radical Hysterectomy*	11	16	5	-	9	9	8	3	3	8
Laparoscopic Radical Trachelectomy*	-	-	-	-	-	-	-	2	-	-
Laparoscopic Radical Parametrectomy*	-	-	-	2	-	-	-	-	-	-
Total Laparoscopic Hysterectomy	4	2	2	2	2	1	1	3	-	-
Robotic Radical Hysterectomy*	-	-	-	-	-	-	2	1	-	-
CKC	15	6	5	6	2	-	1	-	-	-
LEEP	317	235	175	203	157	173	239	144	215	160
Colposcopy	519	556	474	409	406	494	728	659	775	600

*** with pelvic lymphadenectomy**

CKC = Cold Knife Conization

LEEP = Loop Electrosurgical Excision Procedure

Operations and Procedures in Gynecologic Oncology (continued)

Operations and Procedures	**2017** Number	**2018** Number	**2019** Number
Surgery for Ovarian & Tubal Cancer	90	88	69
Surgery for Corpus Cancer	98	87	108
Surgery for Vulvar Cancer	17	22	11
Radical Hysterectomy*	74	56	56
Modified Radical Hysterectomy*	4	4	3
Abandoned Hysterectomy*	-	-	-
Radical Parametrectomy*	2	-	2
Laparoscopic Radical Hysterectomy*	3	3	3
NOTES Assisted Vaginal Hysterectomy	2	2	-
NOTES Assisted Extrafascial Hysterectomy	1	-	-
NOTES to PANS c BSO c BPND	-	-	1
Parametrectomy*	-	-	1
Vaginal hysterectomy c Parametrectomy	-	-	1
Laparoscopic Assisted Vaginal Hysterectomy	-	-	1
Total Laparoscopic Hysterectomy	1	2	11
CKC	-	-	-
LEEP	116	89	115
Colposcopy	537	463	470

Cancer of the Cervix

➢ Distribution by

- Age
- Parity
- Stage and Substage
- HIV Status
- Histological Type
- Treatment

TABLE 2: Cancer of the Cervix: Age Distribution

Age	Number	Percent
≤ 30	11	4.9
31-40	25	11.2
41-50	49	21.9
51-60	72	32.1
61-70	43	19.2
71-80	17	7.6
81-90	7	3.1
Total	**224**	**100**

Minimum age 22 years, Maximum age 90 years
Mean age 54.1 ±13.8 years

TABLE 3: Cancer of the Cervix: Parity Distribution

Parity	Number	Percent
0	37	16.5
1	60	26.8
2	62	27.7
3	30	13.4
4	12	5.4
5	11	4.9
6	4	1.8
7	2	0.9
8	3	1.3
9	2	0.9
Data not available	1	0.4
Total	**224**	**100**

TABLE 4: Cancer of the Cervix: Stage Distribution

Stage	Number	Percent
I	52	23.2
II	69	30.8
III	86	38.4
IV	17	7.6
Total	**224**	**100.0**

TABLE 5: Cancer of the Cervix: Stage and Substage Distribution

	Stage	Number	Percent
I	IA1	4	1.8
	IA2	5	2.2
	IB1	17	7.6
	IB2	12	5.4
	IB3	14	6.3
II	IIA1	5	2.2
	IIA2	9	4.0
	IIB	55	24.6
III	IIIA	2	0.9
	IIIB	46	20.5
	IIIC1	21	9.4
	IIIC2	17	7.6
IV	IVA	6	2.7
	IVB	11	4.9
Total		**224**	**100**

TABLE 6: HIV Status in Cervical Cancer Patients dividing by Stage

Stage	Number Negative HIV (%)	Number Positive HIV (%)	Number not done (%)	Total
IA1	4(1.8)	0	0	4(1.8)
IA2	5(2.2)	0	0	5(2.2)
IB1	17(7.6)	0	0	17(7.6)
IB2	10(4.5)	1(0.4)	1(0.4)	12(5.4)
IB3	11(4.9)	2(0.9)	1(0.4)	14(6.3)
IIA1	5(2.2)	0	0	5(2.2)
IIA2	9(4.0)	0	0	9(4.0)
IIB	53(23.7)	0	2(0.9)	55(24.6)
IIIA	2(0.9)	0	0	2(0.9)
IIIB	40(17.9)	4(1.8)	2(0.9)	47(21.0)
IIIC1	19(8.5)	0	2(0.9)	20(8.9)
IIIC2	15(6.7)	0	2(0.9)	17(7.6)
IVA	6(2.7)	0	0	6(2.7)
IVB	8(3.6)	1(0.4)	2(0.9)	11(4.9)
Total	**204(91.0)**	**8(3.6)**	**12(5.4)**	**224(100)**

TABLE 7: Cancer of the Cervix: Distribution by Histological Type

Histological Type	Number	Percent
Squamous cell carcinoma	**170**	
Well differentiated	3	1.3
Moderately differentiated	105	46.9
Poorly differentiated	45	20.1
No defined differentiation	17	7.6
Adenocarcinoma	37	16.5
Adenosquamous	8	3.6
Small cell NE	4	1.8
Clear cell CA	1	0.4
Cacinosarcoma	1	0.4
Malignant melanoma	1	0.4
Invasive CA	1	0.4
Data not available	1	0.4
Total	**224**	**100**

SCCA = Squamous cell carcinoma MD = Moderately differentiated
NE = Neuroendocrine carcinoma WD = Well differentiated
CA = Carcinoma PD = Poorly differentiated

TABLE 8: Treatment of Cancer of the Cervix

Treatment	Number	Percent
Surgery alone		
TAH	2	0.9
RHPL	15	6.7
LRHPL	3	1.3
Parametrectomy	2	0.9
Chemotherapy alone	**12**	5.4
Concurrent chemoradiation+ Brachytherapy	**120**	53.6
RT + Brachytherapy	**19**	8.5
Combined treatment		
TAH + CCRT	1	0.4
TAH+ RT	1	0.4
TAH+Brachytherapy	1	0.4
RHPL + Brachytherapy	2	0.9
RHPL + CCRT + Brachytherapy	28	12.5
RHPL + CT	2	0.9
RHPL + RT	8	3.6
Lap.Hysterectomy+ CCRT	1	0.4
Extended hysterectomy with BPL + CCRT+ HDR	3	1.3
Abandon Parametrectomy + CCRT	1	0.4
Others		
Palliative	1	0.4
Refer to another hospital for chemotherapy	1	0.4
Lost to follow up	1	0.4
Total	**224**	**100**

*** No of RHPL = 55 cases**

RHPL Radical Hysterectomy with Bilateral Pelvic Lymphadenectomy
TAH Total Abdominal Hysterectomy
LRHPL Laparoscopic Radical Hysterectomy with Pelvic Lymphadenectomy
TLH Total Laparoscopic Hysterectomy
CCRT Concurrent Chemoradiation
RT Radiation Therapy
CT Chemotherapy
BPL Bilateral Pelvic Lymphadenectomy

Cancer of the Ovary

➢ Distribution by

- Age
- Parity
- Histology
- Histology Subtype
  - Epithelial Group
  - Germ Cell Tumor Group
  - Sex cord-stromal Group
  - Other Groups
- Stage
  - Epithelial Group
  - Germ Cell Group
  - Sex cord-stromal Group
  - Other Groups
- Stage and Histology
- Treatment

TABLE 9: Cancer of the Ovary: Age Distribution

Age	Number	Percent
≤20	3	4.5
21-30	8	12.1
31-40	3	4.5
41-50	15	22.7
51-60	21	31.8
61-70	13	19.7
>70	3	4.5
Total	**66**	**100**

Minimum age 10 years, Maximum age 75 years
Mean age 49.1 ± 15.5 years

TABLE 10: Cancer of the Ovary: Parity Distribution

Parity	Number	Percent
0	28	42.4
1	19	28.8
2	14	21.2
3	3	4.5
4	1	1.5
5	1	1.5
6	28	42.4
Total	**66**	**100**

TABLE 11: Cancer of the Ovary: Histological Distribution

Histology	Number	Percent
Epithelium	60	90.9
Germ Cell	5	7.6
Sex cord-Stromal	1	1.5
Total	**66**	**100**

TABLE 12: Epithelial Ovarian Cancer: Histological Subtype Distribution

Histological Subtype	Number	Percent
Serous adeno CA	13	21.7
Serous LMP	2	3.3
Clear cell CA	19	31.7
Endometrioid CA	7	11.7
Mucinous adeno CA	1	1.7
Mucinous LMP	11	18.3
Mixed epithelial CA	2	3.3
Adeno CA	3	5.0
High grade non specific sarcoma	1	1.7
Small cell CA	1	1.7
Total	**60**	**100**

CA = Carcinoma
LMP = Low malignant potential
NE = Neuroendocrine carcinoma

TABLE 13: Ovarian Germ Cell Tumor (GCT): Histological Subtype Distribution

Histological Subtype	Number	Percent
Dysgerminoma	3	60
Immature teratoma	1	20
Yolk sac tumor	1	20
Total	**5**	**100**

SCCA = squamous cell carcinoma
CA = carcinoma
NE = neuroendocrine

TABLE 14: Sex cord-stromal tumor: Histological Subtype Distribution

Subtype	Number	Percent
Adult granulosa cell tumor	1	100
Total	**1**	**100**

TABLE 15: Epithelial Ovarian Cancer: Stage Distribution

Stage	Number	Percent
IA	13	21.7
IC1	4	6.7
IC2	6	10.0
IC3	3	5.0
IIA	1	1.7
IIB	6	10.0
IIIA1	1	1.7
IIIA2	3	5.0
IIIB	2	3.3
IIIC	10	16.7
IVA	2	3.3
IVB	9	15.0
Total	**60**	**100**

TABLE 16: Germ Cell Ovarian Cancer: Stage Distribution

Stage	Number	Percent
IC1	1	20
IC2	2	40
IC3	1	20
IIIC	1	20
Total	**5**	**100**

TABLE 17: Sex cord-stromal tumor: Stage Distribution

Stage	Number	Percent
IC2	1	100
Total	**1**	**100**

TABLE 18: Ovarian Cancer: Stage and Histology Distribution

	Epithelial	Percent	Germ cell	Percent	Sex cord stromal tumor	Percent
IA	13	21.7	-	-	-	-
IC1	4	6.7	1	20	-	-
IC2	6	10.0	2	40	1	100
IC3	3	5.0	1	20	-	-
IIA	1	1.7	-	-	-	-
IIB	6	10.0	-	-	-	-
IIIA1	1	1.7	-	-	-	-
IIIA2	3	5.0	-	-	-	-
IIIB	2	3.3	-	-	-	-
IIIC	10	16.7	1	20	-	-
IVA	2	3.3	-	-	-	-
IVB	9	15.0	-	-	-	-
Total	**60**	**100**	**5**	**100**	**1**	**100**

TABLE 19: Cancer of the Ovary: Primary Treatment and Adjuvant Chemotherapy

Treatment	Number	Percent
Complete SSP with adjuvant chemotherapy	25	37.9
Complete SSP without adjuvant chemotherapy	8	12.1
Incomplete SSP with adjuvant chemotherapy	20	30.3
Incomplete SSP without adjuvant chemotherapy	7	10.6
NAC + plan Surgery	1	1.5
Chemotherapy only	4	6.1
Incomplete SSP Loss to FU after surgery	1	1.5
Total	**66**	**100**

SSP = Surgical Staging Procedure

NAC = Neoadjuvant Chemotherapy

FU = Follow-up

TABLE 20: Ovarian Cancer: Outcome of Treatment

Outcome	Number	Percent
Under FU without disease	30	45.5
During treatment	23	34.8
During treatment with progress/persist of disease	2	3.0
Best supportive care	3	4.5
Recurrence	1	1.5
Lost to FU	3	4.5
Refer to provincial hospital for chemotherapy	4	6.1
Total	**66**	**100**

FU = Follow-up

Cancer of the Uterine Corpus

➢ Distribution by

- Age
- Menopausal Status
- Underlying Medical Diseases
- Parity
- Clinical Staging
- Surgical Staging
- Histology
- Treatment

TABLE 21: Cancer of the Corpus: Age Distribution

Age	Number	Percent
≤30	1	0.9
31-40	4	3.6
41-50	12	10.7
51-60	40	35.7
61-70	46	41.1
71-80	8	7.1
>80	1	0.9
Total	**112**	**100**

Minimum age 24 years, Maximum age 84 years
Mean age 59.4±9.7 years

TABLE 22: Cancer of the Corpus: Distribution by Menopausal Status

Menopausal Status	Number	Percent
Yes	91	81.2
No	21	18.8
Total	**112**	**100**

TABLE 23: Cancer of the Uterine Corpus: Distribution by Underlying Diseases

Medical disease	Number	Percent
None	42	37.5
Hypertension	13	11.6
Hypertension + DM	4	3.6
Hypertension + DM + dyslipidemia	9	8.0
Hypertension + DM + dyslipidemia + CA breast	2	1.8
Hypertension + DM + dyslipidemia + DVT	2	1.8
Hypertension + DM + dyslipidemia + AKI	1	0.9
Hypertension + DM + dyslipidemia + CKD	1	0.9
Hypertension + dyslipidemia	8	7.1
Hypertension + dyslipidemia + Heart disease	1	0.9
Hypertension + dyslipidemia + CA breast	1	0.9
Hypertension + dyslipidemia + PCOs	1	0.9
Hypertension + AF	1	0.9
Hypertension + AF+ Asthma	1	0.9
Hypertension + old CVA	1	0.9
Dyslipidemia	7	6.3
Dyslipidemia + CA thyroid	1	0.9
Dyslipidemia + DVT	1	0.9
CKD	1	0.9
Asthma	1	0.9
Hepatitis B infection	1	0.9
Hepatitis C cirrhosis	1	0.9
Hypothyroid	1	0.9
History of CA breast	2	1.8
Epilepsy+ Mental retardation	1	0.9
Lynch syndrome	1	0.9
Thyrotoxicosis	1	0.9
Obesity	1	0.9
PCOs	1	0.9
Rheumatoid arthritis	1	0.9
Psoriasis	1	0.9
Thalassemia	1	0.9
Total	**112**	**100**

AF = Atrial fibrillation
AKI =
CA = Cancer
CHF = Chronic heart failure
CKD = Chronic kidney disease
CVA = Cerebrovascular accident
DM = Diabetes mellitus
DVT = Deep vein thrombosis
PCOs = Poly cystic ovaries

TABLE 24: Cancer of the Uterine Corpus: Distribution by Parity

Parity	Number	Percent
0	36	32.1
1	17	15.2
2	42	37.5
3	9	8.0
4	7	6.2
8	1	.9
Total	**112**	**100**

TABLE 25: Cancer of the Uterine Corpus: Distribution by Surgical Staging

	Stage	Number	Percent
I	IA	44	39.3
	IB	14	12.5
II	II	8	7.1
III	IIIA	16	14.3
	IIIB	2	1.8
	IIIC1	7	6.2
	IIIC2	7	6.2
IV	IVA	1	0.9
	IVB	13	11.6
Total		**112**	**100**

TABLE 26: Cancer of the Uterine Corpus: Histologic Distribution

Histology Type	Number	Percent
Endometrioid adeno CA		
Grade I	33	44.0
Grade II	26	34.7
Grade III	15	20.0
Grade not defined	1	1.3
Carcinosarcoma	7	6.2
Serous adenoCA	8	7.1
Mixed type	10	8.9
Clear cell adenoCA	7	6.2
Adenoosarcoma	2	1.8
L**ow** grade ESS	1	0.9
Primitive Neuroectodermal tumor	1	0.9
Undifferentiated CA	1	0.9
Total	**112**	**100**

CA = Carcinoma
ESS = Endometrial stromal sarcoma

TABLE 27 : Treatment of Corpus Cancer

Treatment	Number	Percent
Complete SSP	19	17.0
Complete SSP + Chemotherapy	17	15.2
Complete SSP + Radiation therapy + Brachytherapy	3	2.7
Complete SSP + Brachytherapy	13	11.6
Complete SSP + Sequential CCRT + Brachytherapy	22	19.6
Complete SSP +alternative medicine	2	1.8
Incomplete SSP	10	8.9
Incomplete SSP + Chemotherapy	5	4.5
Incomplete SSP + Radiation therapy + Brachytherapy	3	2.7
Incomplete SSP + Sequential CCRT	7	6.3
Incomplete SSP + Brachytherapy	5	4.5
Incomplete SSP + best supportive care	1	0.9
Chemotherapy	3	2.7
Radiation therapy + Brachytherapy	1	0.9
Best supportive care	1	0.9
Total	**112**	**100**

SSP = Surgical staging procedure
CCRT = Concurrent chemoradiation

TABLE 28: Outcome of Treatment of Corpus Cancer

Outcome	Number	Percent
Under FU without disease	52	46.4
During treatment	46	41.1
During treatment with progress/persist of disease	1	.9
Refer to provincial hospital for chemotherapy	3	2.7
Best supportive care	3	2.7
Under FU with disease	2	1.8
Lost to FU	3	2.7
Dead	2	1.8
Total	**112**	**100**

FU = Follow-up

Cancer of the Vulva

- **Distribution by**
  - Age
  - Stage
  - Histology
  - Treatment

TABLE 29: Cancer of the Vulva: Age Distribution

Age	Number	Percent
≤40	1	5.3
41-50	5	26.3
51-60	5	26.3
61-70	4	21.1
>71	4	21.1
Total	**13**	**100**

Minimum age 49 years, Maximum age 77 years
Mean age 63.4. ± 8.0 years

VIN3 1 case, Paget's disease 3 cases

TABLE 30 : Cancer of the Vulva: Stage Distribution

Stage	Number	Percent
IA	1	7.7
IB	4	30.8
II	3	23.1
IIIA	1	7.7
IIIB	1	7.7
IIIC	1	7.7
IV	1	7.7
IVB	1	7.7
Total	**13**	**100**

TABLE 31: Cancer of the Vulva: Histological Type Distribution

Histological Type distribution	Number	Percent
Squamous cell carcinoma		
Well differentiated	4	30.8
Moderately differentiated	3	23.1
No defined differentiation	3	23.1
Basal cell CA	1	7.7
Mucinous AdenoCA	1	7.7
Malignant melanoma	1	7.7
Total	**13**	**100**

CA = carcinoma

TABLE 32 : Treatment of Cancer of the Vulva

Treatment	Number	Percent
Radical local excision + BGND + CCRT	1	7.7
Hemivulvectomy	1	7.7
Anterior vulvectomy + CT	1	7.7
WLE	4	30.8
WLE + RT	1	7.7
BGND +CCRT	1	7.7
BGND +CT	1	7.7
BGND + RT	1	7.7
CT	1	7.7
CCRT	1	7.7
Total	**13**	**100**

WLE = Wide local excision
BGND = Bilateral groin node dissection
RT = Radiation therapy
CCRT = Concurrent chemoradiation
CT = Chemotherapy

Cancer of the Vagina

- **Distribution by**
  - Age
  - Stage
  - Histology
  - Treatment

TABLE 33: Cancer of the Vagina

No	Age	Stage	Histology	Treatment	Outcome
1	62	II	MD, SCCA	CCRT	During treatment
2	62	IV	PD, SCCA	Cisplatin +5FU	During treatment
3	72	II	WD, SCCA	CCRT	During treatment

Cancer of the Fallopian Tube

TABLE 34: Cancer of the Fallopian Tube 2019

Data	Case	Case 2	Case 3
Age	59	53	69
Marital status	Married	Married	Married
Parity	0	2-0-0-2	2-0-0-2
Presenting symptoms	Pelvic mass, post menopausal bleeding	Pelvic mass	Pelvic mass
Stage	IA	IIIA2	IIIC
Histology	High grade serous adenoCA	High grade serous adenoCA	High grade serous adenoCA
Treatment	TAH, BSO, BPND, partial omentectomy + PTx6	TAH, BSO, BPND, partial omentectomy, peritoneal washing + PTx6	TAH, BSO, BPND, partial omentectomy, peritoneal washing + PTx6
Outcome	Under FU without disease	Under FU without disease	During treatment

Data	Case 4	Case 5	Case 6
Age	53	69	75
Marital status	Married	Married	Married
Parity	2-0-0-2	2-0-0-2	4-0-0-2
Presenting symptoms	Pelvic mass	Pelvic mass	Abdominal distension
Stage	IIIA	IVB c lung metastasis	Advance stage
Histology	High grade serous adenoCA	Mucin producing adenoCA	High grade serous adenoCA
Treatment	TAH, BSO, BPND, PANS partial omentectomy, peritoneal washing + PTx6	PTx6	NAC(PTx3) > TAH, BSO, partial omentectomy + PTx3
Outcome	During treatment	During treatment	Under FU without disease

Data	Case 7	Case 8	Case 9
Age	59	55	63
Marital status	Married	Married	Married
Parity	2-0-0-2	0	2-0-0-2
Presenting symptoms	Abdominal distension	Abnormal uterine bleeding	Pelvic mass
Stage	IIIC	IIIA	IIB
Histology	High grade serous adenoCA	High grade serous adenoCA	Serous tubal intraepithelial CA
Treatment	TAH, BSO, omental biopsy + PTx1 > Weekly Paclitaxel	Subtotal hysterectomy, BSO, partial omentectomy + PTx6	TAH, BSO, BPND, PANS partial omentectomy, peritoneal biopsy +
Outcome	During treatment	Under FU without disease	Under FU without disease

BPNS	= Bilateral pelvic node sampling
CA	= Carcinoma
TAH&BSO	= Total abdominal hysterectomy and bilateral salpingo- oophorectomy
PT	= Paclitaxel and Carboplatin
PD	= Poorly differentiated
RT	= Right
LT	= Left
SO	= Salpingo-oophorectomy

Cancer of the Peritoneum

TABLE 35: Cancer of the Peritoneum 2019

Data	Case 1
Age	89
Marital status	Married
Parity	4-0-0-4
Presenting symptoms	Abdominal distension
Stage	Advance stage
Histology	High grade serous adenoCA
Treatment	Carboplatin x2
Outcome	Progresstion of disease > Best supportive care

Cancer of Multiple Primary Gynecologic Organs

TABLE 36: Cancer of the Multiple Primary Gynecologic Organs 2019

Data	Case 1 CA Ovary + CA Colon	Case 2 CA corpus + CA Cervix	Case 3 CA corpus + CA Tube
Age	63	28	71
Marital status	Married	Married	Married
Parity	0	2-0-0-2	4-0-0-4
Presenting symptoms	Pelvic mass	Pelvic mass	Pelvic mass, Abdominal distension
Stage	CA Ovary: - CA Colon: T3N1Mx	CA Corpus: IIIA CA Cervix: IA2	CA Tube : IIIA CA Corpus : IB
Histology	Ovary: Mucinous LMP Colon: WD, adenoCA	CA Corpus: Epitheloid malignant mesothelioma clear cell variant CA Cervix: Adenoid basal CA	CA Tube : High grade serous adenoCA CA Corpus : High grade serous adenoCA
Treatment	TAH, BSO, sigmoidectomy, colostomy + Intaxel	TAH, BSO, BPNS, omental biopsy + PTx6	TAH, BSO, BPND, partial omentectomy, vulvar biopsy, Lt.groin node sampling + PT
Outcome	During treatment	Under FU without disease	Recurrence

Data	Case 4 CA Cervix + CA bladder
Age	83
Marital status	Married
Parity	3-0-0-3
Presenting symptoms	Abnormal uterine bleeding
Stage	CA Cervix: IVA CA Bladder advance stage
Histology	Cervix: PD, SCCA Bladder: Urothelial CA High grade
Treatment	Palliative RT
Outcome	Under FU with disease

CA = carcinoma
PT = Paclitaxel and Carboplatin
TAH&BSO = Total abdominal hysterectomy and bilateral salpingo-oophorectomy
BPND = Bilateral pelvic node dissection
PANS = Paraaortic node sampling
FU = Follow up
SCCA = Squamous cell carcinoma

Gestational Trophoblastic Disease

- Gestational Trophoblastic Tumor

TABLE 37: Gestational Trophoblastic Tumors in 2019

No	Age (yr)	Initial HCG titer	Prognosis Classification	Diagnosis	FIGO	Treatment	Result
1	33	28.70	NMGTT	Persistent mole	I	MTX+FA x1	Remission
2	20	4,350	NMGTT	Persistent mole	I	MTX+FA x6	Remission
3	26	45,533	MGTT (lung)	Choriocarcinoma	III	EMA-CO x7	Remission
4	43	2,569,559	MGTT (lung)	Choriocarcinoma	III	EMA-CO x12	Remission
5	28	9,817	NMGTT	Atypical trophoblastic c chorionic villi	I	Fail MTX > Actinomycin D x8	During treatment
6	30	11,856 (พม่า-urine)	NMGTT	Persistent mole	-	EMA-CO x6	Remission
7	42	7,472	MGTT (lung)	Persistent mole	III	MTX+FA	During treatment

MGTT = Metastatic Gestational Trophoblastic tumor
NMGTT = Non-metastatic Gestational Trophoblastic tumor
EMA = Etoposide + Methotrexate + Actinomycin D
EMA-CO = Etoposide + Methotrexate + Actinomycin D + Cyclophosphamide+ Vincristine
MTX = Methotrexate

TABLE 38: Gestational Trophoblastic Tumors in 2019

No	Age (yr)	Gravida	GA (wk)	Ut size (wk)	Initial HCG titer	Risk	Treatment	Pathology	Result
1	46	G 1 P 0	7	10-12	224,876	high	Suction & Curettage	Complete hydatidiform mole	Remission
2	31	G 2 P 0-1-1-1	6^{+5}	12-14	>100,000	high	Suction & Curettage	Complete hydatidiform mole	Remission

Cancer of Other Gynecologic Organs

TABLE 39: Cancer of other gynecologic organs

Data	**Case 1**	**Case 2**
Age	39	68
Marital status	single	Married
Parity	0	1-0-0-1
Presenting symptoms	Pelvic mass	Axillary mass
Histology	Seminoma	High grade serous adenoCA of Gynecologic origin
Treatment	Bilateral Gonadectomy c BPNS c partial omentectomy c peritoneal washing + BEP	TAh c BSO c peritoneal biopsy + PT
Outcome	During treatment	Refer to provincial hospital for Chemotherapy

BEP = Bleomycin + Eotoposide + Cisplatin
CA = Carcinoma
TAH&BSO = Total abdominal hysterectomy and bilateral salpingo- oophorectomy
PT = Paclitaxel and Carboplatin

SECTION II

- **Medical Personnel and Facilities**
- **Diagnostic Procedures and Gynecologic Oncology Operations**
- **Publications & Presentations**

Medical Personnel and Facilities

TABLE 39: Medical Personnel and Facilities in Division of Gynecologic Oncology, Chiang Mai University

Personnel and Facilities	Number
Medical doctor	11
General nurse	21
Practical nurse	11
Helper	8
Research nurse	3
Research assistant	1
Inpatient bed	20
One-day chemotherapy bed	19
Outpatient bed	7
Colposcope	3
Cryosurgery set	1
Radiosurgery (Surgitron)	3

Funds (**กองทุนของหน่วยมะเร็งวิทยานรีเวช**)

1. Gynecologic Cancer Fund **(** กองทุนมะเร็งทางนรีเวช)
2. Cervical Cancer Surgery Fund (กองทุนผ่าตัดมะเร็งปากมดลูก)

1st Year Fellow

- Atita Ruengsaen, MD
- Khemmanat Sanguanwongthong, MD
- Santipap Srisomboon, MD

2nd Year Fellow

- Supreechaya Phansenee, MD
- Monwanee Muangchang, MD
- Unyavee Apichottiwat, MD

Radiation Oncologists

1. Professor Imjai Chitapanarux, MD
2. Associate Professor Ekkasit Tharavijitkul, MD
3. Somwilai Mayurasakorn, MD
4. Pitchayaponne Klunklin, MD
5. Wimrak Onchan, MD

Gynecologic Pathologists

1. Associate Professor Sumalee Siriaunkgul, MD
2. Professor Surapan Khunamornpong, MD
3. Associate Professor Jongkolnee Settakorn, MD
4. Assistant Professor Kornkanok Sukapan, MD
5. Tip Pongsuwareeyakul, MD

Medical Oncologists

1. Assistant Professor Busyamas Chewaskulyong, MD
2. Associate Professor Chaiyut Charoentum, MD
3. Thatthamn Suksomboon charoen, MD

Diagnostic Procedures and Operations

TABLE 40: Diagnostic Procedures and Operations for Cervical Neoplasia

Procedures & Operations	Number
Colposcopy	470
LEEP	115
Simple Hysterectomy	6
Modified Hysterectomy & PL	3
Radical Hysterectomy & PL	55
Parametrectomy c PL	1
Vaginal hysterectomy c parametrectomy c PL	1
Abandon Parametrectomy	1
Laparoscopic Hysterectomy	1
Laparoscopic Radical Hysterectomy & PL	3

LEEP = Loop Electrosurgical Excision Procedure
PL = Pelvic Lymphadenectomy

TABLE 41: Operations for Ovarian, Corpus, and Vulvar Cancer

Operations	Number
CRS for Ovarian Cancer	61
CRS for Fallopian Tube Cancer	8
CRS for Peritoneal Cancer	1
Surgical Staging for Corpus Cancer	108
Hemivulvectomy & BGND for Vulvar Cancer	1
Radical Local Excision & BGND for Vulvar Cancer	1
Wide Local Excision	5
BGND	4

CRS = Cytoreductive Surgery
BGND = Bilateral Groin Node Dissection

PUBLICATIONS & PRESENTATIONS

2019

Human Papillomavirus in Thai women and men with anogenital warts.

Nilyanimit P, Chansaenroj J, **Srisomboon J**, Rodrangnok W, Rajakom N, Daengsaard E, Sookrak N, Poovorawan Y.

OBJECTIVE: Anogenital warts are caused by human papillomavirus (HPV). Globally, HPV genotypes 6 and 11 are most often associated with anogenital warts. However, the diversity of HPV genotypes found in patients with genital warts in Thailand is unknown. The aim of this study was to investigate HPV-associated anogenital warts in the Thai population and to assess whether genotypes found are represented in the bivalent and quadrivalent HPV vaccine.

METHODS: This study included 206 anogenital swab samples from patients who were diagnosed with anogenital warts. Detection of HPV DNA was performed using polymerase chain reaction to amplify the L1 gene and sequencing.

RESULTS: HPV was identified in 88.3% (182/206) of the samples. The majority of HPV genotypes were low-risk genotypes HPV6 (36.9%) and HPV11 (36.4%), which represented the most common infection found in genital warts in this study.

CONCLUSION: Immunization with the quadrivalent vaccine (HPV6, HPV11, HPV16, and HPV18) could potentially prevent genital warts caused by HPV infection.

Published in: Intervirology. 2018;61(5):223-229. doi: 10.1159/000497351. Epub 2019 Mar 22.

Role of genomic DNA methylation in detection of cytologic and histologic abnormalities in high risk HPV-infected women.

Dankai W, Khunamornpong S, Siriaunkgul S, Soongkhaw A, Janpanao A, Utaipat U, Kitkumthorn N, Mutirangura A, **Srisomboon J**, Lekawanvijit S.

Cervical cancer is the fourth most common malignancy affecting women worldwide. The development of disease is related to high-risk human papillomavirus (hrHPV) infection. Cytology has been the most recommended triage for primary cervical (pre)cancer screening despite relatively low sensitivity. Recently, genomic DNA methylation has been proposed as an additional marker to increase sensitivity for detecting cervical precancerous lesion. This study aimed to evaluate the performance of methylation status of three tumor suppressor genes (CADM1, FAM19A4, and MAL) and HPV genotyping in detection of cytologic and histologic abnormalities in cervical cancer screening. Two hundred and sixty samples with available frozen cell pellets including 70 randomly selected cases of negative for intraepithelial lesion or malignancy (NILM)&HPV-negative, 70 randomly selected cases of NILM&HPV-positive, and 120 cytologic abnormalities & HPV-positive from a population-based cervical cancer screening program (n = 7,604) were investigated for the DNA methylation pattern of CADM1, FAM19A4, and MAL. Of 120 cytologic abnormalities & HPV-positive cases, there were 115 available histologic results. HPV52 and HPV58 were most commonly found in histologic HSIL+. The methylation levels of CADM1, FAM19A4, and MAL were elevated with the severity of cytologic abnormality which significantly increased by 3.37, 6.65 and 2 folds, respectively, in cytologic HSIL comparing with NILM. A significant increase in methylation levels of these three genes was also observed in histologic HSIL+ compared with negative histology but only CADM1 showed a significant higher methylation level than histologic LSIL. Using the ROC curve analysis, DNA methylation levels of FAM19A4 performed best in differentiating high-grade cytology (ASC-H+ from NILM/ASC-US/LSIL), followed by CADM1 and MAL. Whilst the CADM1 methylation performed best in distinguishing histologic HSIL+ from negative/LSIL with an area under the ROC curve of 0.684, followed by MAL (0.663) and FAM19A4 (0.642). Interestingly, after combining high DNA methylation levels to HPV16/18 genotypes, rates of histologic HSIL+ detection were substantially increased from 25% to 79.55% for CADM1, 77.27% for FAM19A4, and 72.73% for MAL, respectively. The rate further increased up to 95.45% when at least one of three genes had a high methylation level. This suggests a possible role of genomic DNA methylation, especially CADM1, in detecting histologic HSIL+ lesions in combination with hrHPV testing.

Published in: PLoS One 2019; 14(1): e0210289.

Health education interventions to promote early presentation and referral for women with symptoms of endometrial cancer

Cheewakriangkrai C, Kietpeerakool C, Aue-aungkul A, **Charoenkwan K**, Pattanittum P, John D, Lumbiganon P.

This is a protocol for a Cochrane Review (Intervention). The objectives are as follows: To determine the effectiveness of health education interventions involving healthcare providers or individuals or both to promote early presentation and early referral for women with symptoms of endometrial (womb) cancer.

Published in: Cochrane Database Syst Rev 2019; 2019(1): CD013253.

Cervical screening results leading to detection of adenocarcinoma in situ of the uterine cervix

Srisomboon S, **Tantipalakorn C**, **Charoenkwan K**, **Srisomboon J**.

BACKGROUND: Adenocarcinoma in situ (AIS) of the uterine cervix is a preinvasive lesion of the invasive adenocarcinoma. We analyzed the cervical screening results leading to detecting the AIS lesions including the coexistence of AIS lesions with high-grade squamous intra-epithelial lesions (HSIL) and invasive carcinoma.
METHODS: Women who were diagnosed and received treatment for AIS at Chiang Mai University Hospital between January 1, 2007 and August 31, 2016 were retrospectively reviewed. The inclusion criteria were the women who had pathological diagnosis of AIS obtained from cervical punch biopsy or excisional cone biopsy with either loop electrosurgical excision procedure (LEEP) or cold-knife conization (CKC). The patient characteristics, diagnostic work-up and treatment details were reviewed, including the cervical screening results prior to the diagnosis of cervical AIS, pathologic results of excisional cone biopsy and hysterectomy specimens.
RESULTS: During the study period, 75 women with AIS pathology undergoing excisional cone biopsy with either LEEP (n=62) or CKC (n=13) were identified. The abnormal cytologic screening leading to detection of AIS was the squamous cell abnormality accounting for 57.3%. Abnormal glandular cytology accounted for 37.3%. The most common abnormal cervical screening results was HSIL cytology (n = 25) followed by AIS cytology (n = 13). Normal cytology was noted in 4 women in whom 3 were positive for HPV 18 and 1 had AIS on the endocervical polyp. AIS coexisted with HSIL and invasive carcinoma were detected in cone biopsy specimens in 21 (28%) and 29 (38.7%) patients, respectively.
CONCLUSION: The majority of cervical screening results leading to detection of cervical AIS was the squamous cell abnormality accounting for 57.3% in which, HSIL cytology was the most common. Abnormal glandular cytology accounted for only 37.3%. Diagnostic cone excision is recommended if AIS lesion is noted in cervical biopsy specimen since nearly 40% have coexisting invasive lesions.
Published in: Asian Pac J Cancer Prev 2019; 20(2): 377-382.

Asian Society of Gynecologic Oncology International Workshop 2018.

Kong TW, Ryu HS, Kim SC, Enomoto T, Li J, Kim KH, Shim SH, Wang PH, Therasakvichya S, Kobayashi Y, Lee M, Shi T, Lee SW, Mikami M, Nagase S, Lim MC, Wang J, Wilailak S, Kim SW, Hong SH, Tan DS, Mandai M, Chang SJ, Huang RYJ, Ushijima K, Lee JY, Chen X, Ochiai K, Lee TS, Yang B, Kalam F, Lv Q, Ahmad MF, Yaznil MR, Modi KB, **Manopunya M**, Jeong DH, Lertkhachonsuk AA, Chung HH, Watari H, Jeon S.

The Asian Society of Gynecologic Oncology International Workshop 2018 on gynecologic oncology was held in the Ajou University Hospital, Suwon, Korea on the 24th to 25th August 2018. The workshop was an opportunity for Asian doctors to discuss the latest findings of gynecologic cancer, including cervical, ovarian, and endometrial cancers, as well as the future of fertility-sparing treatments, minimally invasive/radical/debulking surgery, radiotherapy, chemotherapy, targeted therapy, and immunotherapy. Clinical guidelines and position statement of Asian countries were presented by experts. Asian clinical trials for gynecologic cancers were reviewed and experts emphasized the point that original Asian study is beneficial for Asian patients. In Junior session, young gynecologic oncologists presented their latest research on gynecologic cancers.

Published in: J Gynecol Oncol 2019; 30(2): e39.

Factors associated with development of high-grade squamous intraepithelial lesions of the uterine cervix in women younger than 30 years

Wudtisan J, **Tantipalakorn C**, **Charoenkwan K**, Sreshthaputra R-A, **Srisomboon J**.

OBJECTIVE: To determine the factors associated with the increased risk of developing high-grade squamous intraepithelial lesions (HSIL) of the uterine cervix in women younger than 30 years compared with those aged ≥ 30 years who also had HSIL.
METHODS: Patients with HSIL who underwent loop electrosurgical excision procedure (LEEP) between January 2006 and July 2017 at Chiang Mai University Hospital were retrospectively reviewed. We analyzed the factors associated with the development of HSIL by comparing two age groups between women aged < 30 years and those aged ≥ 30 years. The factors analyzed included the well-recognized risk factors for cervical cancer, i.e. age at sexual debut, number of sexual partners, use of oral contraceptive (OC) pills, smoking history, sexually transmitted diseases and HIV status. Univariate and multivariate logistic regressions were used to assess factors associated with the increased risk of developing HSIL in women younger than 30 years compared with those aged ≥ 30 years.
RESULTS: During the study period, there were 345 patients with HSIL, 30 were < 30 years (case group) and 315 aged ≥ 30 years (control group). By multivariate analyses , early sexual debut(OR, 2.86; 95% CI, 1.01-8.13; P=0.047), multiple sexual partners (OR, 2.94; 95% CI, 1.23-7.02; P=0.015), history of genital warts (OR, 20.46; 95% CI, 2.27-183.72; P=0.007) and history of smoking (OR, 2.95; 95% CI, 1.10-7.93; P=0.032) were significantly associated with the development of HSIL in women younger than 30 years when compared with those aged ≥ 30 years. The OC use, HIV status and underlying diseases were not significantly different in both groups.
CONCLUSION: Early age at sexual debut, multiple sexual partners, history of genital warts and smoking are significant risk factors for developing HSIL in women younger than 30 years. Cervical cancer screening should be considered in young women with such factors.
Published in: Asian Pac J Cancer Prev 2019; 20(4): 1031-1036.

Development and validation of a predictive score for preoperative diagnosis of early stage epithelial ovarian cancer

Chirdchim W, Wanichsetakul P, Phinyo P, Patumanond J, Suwannarurk K, **Srisomboon J**.

OBJECTIVE: To develop and validate a simplified multi-parameter risk-based scoring system for preoperative diagnosis of early stage epithelial ovarian cancer.
METHODS: All women presented with adnexal mass and were scheduled for operation at Phrapokklao hospital during September 2013 - December 2017 were included and categorized according to their histopathologic reports into early stage ovarian cancer groups and benign ovarian tumor groups. Multivariable logistic regression was used to explore for potential predictors. The selected logistic coefficients were transformed into risk-based scoring system. Internal validation was done with bootstrapping procedure.
RESULTS: A total of 270 participants were included in analysis and predictive model development, 54 in early stage ovarian cancer group and 216 in benign ovarian tumor group. Menopausal status, two abnormal ultrasound findings (presence of solid component or ascites), tumor size and serum CA-125 level were used for derivation of the scoring system. The score-based model showed area under ROC of 0.88 (95%CI 0.82-0.93). The developed scoring system ranged from 0 to 51 was classified into 3 subcategories for clinical practicability. The positive predictive values for the presence of early stage ovarian cancer were 2.07 (95%CI 0.43-6.05) for low risk patient, 29.13(95%CI 19.65-41.58) for moderate risk patient, and 95.45(95%CI 77.16-99.88) for high risk patient.
CONCLUSION: This simplified risk-based scoring system for preoperative diagnosis of early stage ovarian cancer could aid general physicians or general gynecologists in evaluation of patients presenting with ovarian tumors and help gynecologic oncologists in management planning and prioritization of patients for operation.
Published in: Asian Pac J Cancer Prev 2019; 20(4): 1207-1213.

Effects of lidocaine spray for reducing pain during endometrial aspiration biopsy: A randomized controlled trial.

Piyawetchakarn R, **Charoenkwan K**.

AIM: To examine the effect of lidocaine spray for reducing pain during endometrial aspiration biopsy by comparing it with placebo and no intervention.
METHODS: Women undergoing endometrial aspiration biopsy from March 2017 to January 2018 were invited to participate. The participants were randomly assigned into three groups. In group 1 (lidocaine spray), eight puffs (80 mg, 10 mg/puff, 0.8 mL) of 10% lidocaine spray was applied thoroughly to the cervix, 3 min before starting the procedure. For group 2 (placebo spray), 0.8 mL of normal saline spray was applied to the cervix, 3 min before starting the procedure. For group 3 (no intervention), no anesthesia was given. The patients rated their pain according to a 10-cm visual analog scale at different points including baseline, immediately after the procedure (biopsy pain), and 10 min after the procedure. The 10-cm visual analog scale on satisfaction was also rated before hospital discharge. Comparison of continuous variables was made by using Kruskal-Wallis test. Chi squared test was used for comparison of categorical variables.
RESULTS: Two hundred and forty patients (80 in each group) participated. The mean baseline, biopsy and postprocedural pain scores were not significantly different among the study groups. Similarly, the mean difference between the biopsy and the baseline pain scores were comparable among the groups. In addition, there was no difference on the satisfaction scores among the groups.
CONCLUSION: Lidocaine spray applied to the cervix is not effective for reducing pain associated with pipelle endometrial aspiration biopsy.
Published in: J Obstet Gynaecol Res 2019; 45(5): 987-993.

A randomized controlled trial comparing concurrent chemoradiation versus concurrent chemoradiation followed by adjuvant chemotherapy in locally advanced cervical cancer patients: ACTLACC trial.

Tangjitgamol S, Tharavichitkul E, Tovanabutra C, Rongsriyam K, Asakij T, Paengchit K, Sukhaboon J, Penpattanagul S, Kridakara A, Hanprasertpong J, Chomprasert K, Wanglikitkoon S, Atjimakul T, Pariyawateekul P, Katanyoo K, Tanprasert P, Janweerachai W, Sangthawan D, Khunnarong J, Chottetanaprasith T, Supawattanabodee B, Lertsanguansinchai P, **Srisomboon J**, Isaranuwatchai W, Lorvidhaya V.

OBJECTIVE: To compare response rate and survivals of locally advanced stage cervical cancer patients who had standard concurrent chemoradiation therapy (CCRT) alone to those who had adjuvant chemotherapy (ACT) after CCRT.
METHODS: Patients aged 18-70 years who had International Federation of Gynecology and Obstetrics stage IIB-IVA without para-aortic lymph node enlargement, Eastern Cooperative Oncology Group scores 0-2, and non-aggressive histopathology were randomized to have CCRT with weekly cisplatin followed by observation (arm A) or by ACT with paclitaxel plus carboplatin every 4 weeks for 3 cycles (arm B).
RESULTS: Data analysis of 259 patients showed no significant difference in complete responses at 4 months after treatment between arm A (n=129) and arm B (n=130): 94.1% vs. 87.0% (p=0.154) respectively. With the median follow-up of 27.4 months, 15.5% of patients in arm A and 10.8% in arm B experienced recurrences (p=0.123). There were no significant differences of overall or loco-regional failure. However, systemic recurrences were significantly lower in arm B than arm A: 5.4% vs. 10.1% (p=0.029). The 3-year progression-free survival (PFS) and 3-year overall survival (OS) of the patients in both arms were not significantly different. The hazard ratio of PFS and OS of arm B compared to arm A were 1.26 (95% CI=0.82-1.96; p=0.293) and 1.42 (95% CI=0.81-2.49; p=0.221) respectively.
CONCLUSIONS: ACT with paclitaxel plus carboplatin after CCRT did not improve response rate and survival compared to CCRT alone. Only significant decrease of systemic recurrences with ACT was observed, but not overall or loco-regional failure.
Published in: J Gynecol Oncol 2019; 30(4): e82.

Comparison of the diagnostic accuracy of International Ovarian Tumor Analysis simple rules and the risk of malignancy index to discriminate between benign and malignant adnexal masses.

Auekitrungrueng R, Tinnangwattana D, **Tantipalakorn C**, Charoenratana C, Lerthiranwong T, Wanapirak C, Tongsong T.

OBJECTIVE: To compare the diagnostic accuracy of International Ovarian Tumor Analysis (IOTA) simple rules and risk of malignancy index (RMI 1/RMI 2) scoring to discriminate between benign and malignant adnexal masses.
METHODS: Secondary analysis of a cohort of patients scheduled for surgery for adnexal masses in a tertiary center between April 2010 and March 2018. Ultrasound examinations were performed by general gynecologists within 24 hours prior to surgery to evaluate sonographic features. Demographic data and preoperative CA 125 levels were recorded. IOTA rules and RMI scoring were applied to predict malignancy and prospectively recorded. Final diagnosis was based on pathological or intraoperative diagnosis.
RESULTS: A total of 479 masses met the inclusion criteria and were retrieved from the database: 334 (69.7%) benign and 145 (30.3%) malignant. IOTA rules could be applied to 392 (81.8%) masses and were inconclusive in 87 (18.2%). Sensitivity and specificity of IOTA rules (83.8% and 92.0%, respectively) were significantly higher than RMI 1 (77.2% and 86.8%, respectively) and RMI 2 (82.1% and 82.6%, respectively).
CONCLUSION: IOTA simple rules had higher diagnostic accuracy compared with RMI to discriminate between benign and malignant adnexal masses; however, nearly 20% of IOTA results were inconclusive and needed expert consultation.
Published in: Int J Gynaecol Obstet 2019; 146(3): 364-369.

The Annual Meeting of the Thai Gynecologic Cancer Society 2019: Meeting report.

Charoenkwan K, Srisomboon J.

(No abstract available)

Published in: J Gynecol Oncol 2019; 30(6): e118.

The experience of genitourinary syndrome of menopause (GSM) among Thai postmenopausal women: the non-reporting issue.

Srisukho S, Pantasri T, Piyamongkol W, **Phongnarisorn C**, Morakote N.

Genitourinary syndrome of menopause (GSM) is common among postmenopausal women, but, in general, not all of the patients seek medical advice as this sensitive issue can cause them embarrassment.
OBJECTIVES: To explore the prevalence of GSM among Thai postmenopausal women and their disclosure of and attitude towards GSM.
METHODS: A questionnaire was used to obtain information on GSM from 499 Thai postmenopausal women who attended the Menopause Clinic at Maharaj Nakorn Chiang Mai Hospital, Chiang Mai, Thailand, from November 2015 to August 2016.
RESULTS: The mean age of the 499 participants was 57.8 +/- 7.2 years. It was notable that 87.2% of them had had GSM, and the prevalence increased with age. The most common symptoms were nocturia (77.7%) and vaginal dryness (51.7%). Among the symptomatic patients, 63.0% conveyed their problem to other people, i.e., friends and family, while 52.9% of them never reported to health care providers. The most common reason for not talking about their GSM was the acceptance of it being part of the natural aging process.
CONCLUSIONS: GSM is common among Thai postmenopausal women. The prevalence of non-reporting is high and underreported.
Published in: Int Urogynecol J 2019; 30(11): 1843-1847.

Primary signet ring cell carcinoma with neuroendocrine differentiation arising in mucinous borderline tumor of the ovary.

Pongsuvareeyakul T, **Charoenkwan K**, **Suprasert P**, Khunamornpong S.

- Primary signet ring cell carcinoma in ovarian mucinous tumor is rare.
- The most important differential diagnosis is metastatic carcinoma.
- We report a case of primary ovarian signet ring cell carcinoma in mucinous tumor.
- Clinicopathological correlation is essential to establish the correct diagnosis.

Published in: Gynecol Oncol Rep 2019; 31: 100522.

Management of drainage for malignant ascites in gynaecological cancer.

Kietpeerakool C, Rattanakanokchai S, Jampathong N, **Srisomboon J**, Lumbiganon P.

BACKGROUND: Ascites is the accumulation of fluid within the abdominal cavity. Most women with advanced ovarian cancer and some women with advanced endometrial cancer need repeated drainage for ascites. Guidelines to advise those involved in the drainage of ascites are usually produced locally and are generally not evidence-based. Managing drains that improve the efficacy and quality of the procedure is key in making recommendations that could improve the quality of life (QoL) for women at this critical period of their lives.

OBJECTIVES: To evaluate the effectiveness and adverse events of different interventions for the management of malignant ascites drainage in the palliative care of women with gynaecological cancer.

SEARCH METHODS: We searched CENTRAL, MEDLINE, and Embase to 4 November 2019. We checked clinical trial registries, grey literature, reports of conferences, citation lists of included studies, and key textbooks for potentially relevant studies.

SELECTION CRITERIA: We included randomised controlled trials (RCTs) of women with malignant ascites with gynaecological cancer. If studies also included women with non-gynaecological cancer, we planned to extract data specifically for women with gynaecological cancers or request the data from trial authors. If this was not possible, we planned to include the study only if at least 50% of participants were diagnosed with gynaecological cancer.

DATA COLLECTION AND ANALYSIS: Two review authors independently selected studies, extracted data, evaluated the quality of the included studies, compared results, and assessed the certainty of the evidence using Cochrane methodology.

MAIN RESULTS: In the original 2010 review, we identified no relevant studies. This updated review included one RCT involving 245 participants that compared abdominal paracentesis and intraperitoneal infusion of catumaxomab versus abdominal paracentesis alone. The study was at high risk of bias in almost all domains. The data were not suitable for analysis. The median time to the first deterioration of QoL ranged from 19 to 26 days in participants receiving paracentesis alone compared to 47 to 49 days among participants receiving paracentesis with catumaxomab infusion (very low-certainty evidence). Adverse events were only reported among participants receiving catumaxomab infusion. The most common severe adverse events were abdominal pain and lymphopenia (157 participants; very low-certainty evidence). There were no data on the improvement of symptoms, satisfaction of participants and caregivers, and cost-effectiveness.

AUTHORS' CONCLUSIONS: Currently, there is insufficient evidence to recommend the most appropriate management of drainage for malignant ascites among women with

gynaecological cancer, as there was only very low-certainty evidence from one small RCT at overall high risk of bias.

Published in: Cochrane Database Syst Rev 2019; 12: CD007794.

Perioperative complications of hysterectomy after a previous cesarean section: a systematic review and meta-analysis.

Rattanakanokchai S, Kietpeerakool C, **Srisomboon J**, Jampathong N, Pattanittum P, Lumbiganon P.

BACKGROUND: With increasing rates of cesarean sections (CS), the number of hysterectomies performed among women with a previous CS is on the rise.
OBJECTIVE: To provide the association between the odds of complications following a hysterectomy performed later in life and a previous CS.
SEARCH STRATEGY: A comprehensive search was performed using major electronic databases, ie, MEDLINE, Scopus, ISI Web of Science, from their inception to April 2019.
SELECTION CRITERIA: Analytical studies, irrespective of language or publication status, were included.
DATA COLLECTION AND ANALYSIS: Outcomes were extracted in duplicate. The methodological quality of the included studies was independently evaluated by two review authors. A three-level meta-analysis was applied for outcomes with dependent effect sizes.
MAIN RESULTS: Twenty-six studies were included involving 54,815 women. The odds of the following complications were increased in women with a previous CS: urinary tract injury (pooled unadjusted odds ratio (OR)=3.15, 95% CI=2.01-4.94, 15 studies, 33,902 women, and pooled adjusted OR=2.21, 95% CI=1.46-3.34, 3 studies, 31,038 women), gastrointestinal tract injury (pooled unadjusted OR=1.73, 95% CI=1.19-2.53; 7 studies, 30,050, and pooled adjusted OR=1.83, 95% CI=1.11-3.03, 1 study, 25,354 women), postoperative infections (pooled unadjusted OR=1.44, 95% CI=1.22-1.71, 6 studies, 37,832 women), wound complications (pooled unadjusted OR=2.24, 95% CI=1.94-2.57, 9 studies, 37,559 women), reoperation (pooled unadjusted OR=1.46, 95% CI=1.19-1.78, 2 studies, 9,899 women), and blood transfusion (pooled unadjusted OR=1.35, 95% CI=1.03-1.76, 7 studies, 13,430 women).
CONCLUSION: Previous CS increases risks of various complications following hysterectomy. This information reminds the gynecologists to be aware of the associations between previous CS and potential complications among women undergoing hysterectomy.
PROSPERO REGISTRATION NUMBER: CRD42018085061.
Published in: Clin Epidemiol 2019; 11: 1089-1098.

Effect of elastic abdominal binder on pain and functional recovery after caesarean delivery: a randomised controlled trial

Chankhunaphas W, **Charoenkwan K.**

The Elastic abdominal binder has been widely employed by clinicians for pain relief, wound complications prevention, improved pulmonary function, and stabilisation. However, these proposed benefits have not been properly examined in women following caesarean delivery. We aimed to examine the effects of post-caesarean elastic abdominal binder use on recovery by comparing post-operative pain, mobility and quality of life. Pregnant women undergoing caesarean delivery were randomly assigned into two groups: abdominal binder (90 patients) and control (90 patients). The primary outcomes included the daily visual analogue scale pain scores and the distance from the six-minute walk test. Baseline characteristics were similar between the groups. There was no significant difference in pain scores and six-minute walking distance between the study groups. There was no significant between-group difference in quality-of-life dimensions, overall health status, and post-operative complication. The positive effects of elastic abdominal binder use following caesarean delivery could not be demonstrated in this study.

Published in: Journal of Obstetrics and Gynaecology. 2019 Sep 5;1-6.

EP988 Hematologic markers of survival outcome in epithelial ovarian, fallopian tube and primary peritoneal cancer patients treated with platinum-based chemotherapy

Suprasert P, Jeerakornpassawat D.

BACKGROUND: A recent molecular cancer study suggested that inflammatory parameters such as neutrophils and platelet can facilitate tumor initiation, tumor progression, induction of angiogenesis and promote metastatic spreading by inhibiting the natural killer function. Therefore, the elevated absolute neutrophil count (ANC), platelet, neutrophil to lymphocyte ratio (NLR) and platelet to lymphocyte ratio (PLR) in many solid tumors are associated with a worse prognosis. However, only a few studies were conducted to further investigate this association in epithelial ovarian cancer (EOC), fallopian tube cancer (FT) and primary peritoneal cancer (PPA).
OBJECTIVE: To investigate the association of hematologic parameter and survival outcome in patients with EOC, FT and PPA who treated with platinum-based chemotherapy.
METHODOLOGY: 306 medical records of patients with EOC, FT and PPA treated with platinum-based chemotherapy between 2007 and 2017 were reviewed. The association between pretreatment ANC, platelet, NLR and PLR with survival outcome were investigated by using receiver operating characteristic (ROC) curves analysis to determine the optimal cutoff values.
RESULTS: Nearly 80% were diagnosed as EOC. About one-fifth of the patients were received neoadjuvant chemotherapy followed by debulking surgery. Patients with high level of ANC (>5341 cell/cumm3), Platelet >325,000 cell/cumm3 NLR >3.3 and PLR >200.3 were significant more common in advanced stage (III&IV) and associated to poor survival outcome with hazard ratio at 1.632,2.072,2.113 and 2.113, respectively.
CONCLUSION: Conclusion Pretreatment hematologic parameters were associated to poor survival outcome.
Published in: International Journal of Gynecologic Cancer 2019;29:A523.

Methods of pain control during endometrial biopsy: A systematic review and meta-analysis of randomized controlled trials.

Charoenkwan K, **Nantasupha C**.

AIM: To review effectiveness of methods for reducing pain during endometrial biopsy.
METHODS: PubMed, Scopus, Cochrane Central Register of Controlled Trials and ClinicalTrials.gov databases were searched for randomized controlled trials that examined effectiveness of pain control methods for endometrial biopsy. Risk of bias was assessed from sequence generation, allocation concealment, blinding, incomplete outcome data and selective outcome reporting. Heterogeneity was examined from forest plot, statistical tests of homogeneity, and I2 statistic. For meta-analysis of pain scores, weighted mean difference with 95% confidence interval (CI) were estimated.
RESULTS: Twenty-six studies were included in the review. Marginally significant reduction in the pain score during the procedure in participants with intrauterine lidocaine relative to control was observed (mean difference [MD] -1.31, 95% confidence interval [CI] -2.70 to 0.09, P = 0.07). Subgroup analysis showed that in studies that used low-pressure suction devices, intrauterine lidocaine was associated with statistically significant reduction in pain during the procedure (MD -2.22, 95% CI -3.72 to -0.73, P = 0.004). There was a significantly lower pain score during biopsy in the anesthetic spray group compared to control (MD -0.96, 95% CI -1.53 to -0.39, P = 0.001). Significant heterogeneity on types of intervention and outcome measures among studies that examined paracervical block and nonsteroidal anti-inflammatory drugs (NSAID) was observed. However, paracervical block and NSAID were associated with significant pain reduction compared to placebo in most of the related studies.
CONCLUSION: Intrauterine anesthetics, anesthetic cervical spray, paracervical block and oral NSAID provide effective pain control during endometrial biopsy.
Published in: J Obstet Gynaecol Res. 2020 Jan;46(1):9-30. doi: 10.1111/jog.14152. Epub 2019 Oct 30. Review.

PRESENTATIONS

2019

A modified technique for nerve-sparing radical hysterectomy

Charoenkwan K.
(Invited speaker)

Session: Shingo Fujii Medical Academy
Date & Time: 2019 October 10 (Thu), 14:20-14:55
Conference: The 6th Biennial Meeting of Asian Society of Gynecologic Oncology, 2019 October 10-12; Songdo Convensia, Incheon, Korea.

Predictive models for metastasis and recurrence after radical hysterectomy in patients with early-stage cervical cancer

Charoenkwan K.
(Invited speaker)

Session: Revised FIGO Stage of Cervix Cancer & Related Issues
Date & Time: 2019 October 11 (Fri), 09:15-09:30
Conference: The 6th Biennial Meeting of Asian Society of Gynecologic Oncology, 2019 October 10-12; Songdo Convensia, Incheon, Korea.

Ovarian metastasis in early-stage cervical cancer: a large single institution study

Charoenkwan K.
(Invited speaker)

Session: Cervical Cancer & GTN Treatment
Date & Time: 2019 October 12 (Sat), 10:20-10:30
Conference: The 6th Biennial Meeting of Asian Society of Gynecologic Oncology, 2019 October 10-12; Songdo Convensia, Incheon, Korea.

The annual meeting of the Thai Gynecologic Cancer Society 2019: Meeting report.

Charoenkwan K, **Srisomboon J**.

(No abstract available)
Published in: J Gynecol Oncol. 2019 Nov;30(6):e118. doi: 10.3802/jgo.2019