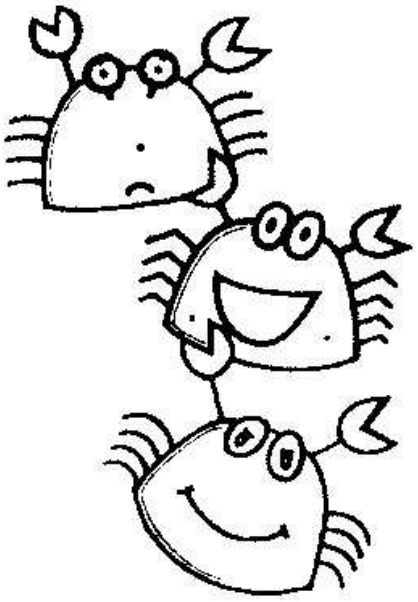
ANNUAL REPORT

ON

GYNECOLOGIC ONCOLOGY

2020



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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FACULTY OF MEDICINE, CHIANG MAI UNIVERSITY
CHIANG MAI, THAILAND
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PREFACE

This updated 2020 version of the Gynecologic Oncology Annual Report summarizes our activities over the year. We managed 418 women diagnosed with gynecologic malignancies. Approximately half of these patients had cervical cancer while uterine cancer and ovarian cancer contributed almost equally to 35 % of all the cases. This information implies that carcinoma of the uterine cervix, uterine corpus, and ovary continue to play a dominant role when malignancies of the female genital tract are considered. This finding could be at least partly explained by the relative decrease in cervical cancer incidence resulting from more effective screening strategy with wider coverage and the relative increase in incidence of uterine and ovarian cancer due to the lifestyle change of this population.

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, Mrs. Sopida Fanchomphu and Mr. Tanarat Muangmool for their excellent work on gathering data for and editing this publication. Also, I am thankful to Ms. Sukanya Yanunto, Mrs. Sopida Fanchomphu and Ms. Orathai Baisai for their hard work and great help on day-to-day data collection and database maintenance. In addition, I would like to hereby 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.

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TABLE 1: Gynecologic Oncology Registry: Chiang Mai University 1997-2020

Site	1997 Number (%)	1998 Number (%)	1999 Number (%)	2000 Number (%)	2001 Number (%)	2002 Number (%)	2003 Number (%)	2004 Number (%)	2005 Number (%)	2006 Number (%)
Cervix	547 (75.2)	483 (73.0)	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 (15.9)	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 (2.8)	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 (2.0)
Vagina	11 (1.5)	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(659) (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 1997-2020 (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 (62.3)	436 (58.1)	449(64.2)	387(57.2)	345 (57.9)	285 (54.8)	297 (58.4)	244 (52.6)	251 (52.5)
Ovary	132 (17.5)	115 (15.2)	141 (18.8)	105 (15.0)	118 (17.5)	86 (14.5)	85 (16.3)	87 (17.1)	85 (18.3)	69 (14.5)
Corpus	91 (12.0)	117 (15.4)	116 (15.5)	94 (13.5)	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 1997-2020 (continued)

Site	2017 Number (%)	2018 Number (%)	2019 Number (%)	2020 Number (%)
Cervix	256 (51.2)	213(51.9)	224(51.3)	228(54.5)
Ovary	90 (18.0)	71(17.3)	66(15.1)	67(16)
Corpus	102 (20.4)	88(21.4)	112(25.6)	81(19.4)
Vulva	20 (4.0)	19(4.6)	13(3.0)	15(3.6)
Vagina	5 (1.0)	1(0.2)	3(0.7)	5(1.2)
FT	9 (1.8)	14(3.4)	9(2.1)	11(2.6)
PPA	2 (0.4)	2(0.5)	1(0.2)	2(0.5)
GTT	16 (3.2)	2(0.5)	7(1.6)	9(2.2)
Others	-	1(0.2)	2(0.4)	-
Total	**500 (100)**	**411(100)**	**437(100)**	**418(100)**

PPA = Primary peritoneal adenocarcinoma FT = Fallopian tube GTT = Gestational trophoblastic tumors

Gynecologic Oncology Multiple Primary Cancers: Chiang Mai University 2002-2020

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 2002-2020

Multiple primary cancers	2013 Number	2014 Number	2015 Number	2016 Number	2017 Number	2018 Number	2019 Number	2020 Number
Ovarian and cervical cancer	-	1	-	-	-	-		-
Ovarian and corpus cancer	4	4	3	5	2	3		-
Corpus and cervical cancer	-	1	-	-	2	-		-
Corpus and fallopian tube cancer	-	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 colon cancer	-	-	-	-	-	-		-
Corpus and bladder cancer	-	-	-	-	1	-		-
Cervix and ileal cancer	-	-	-	-	-	-		-

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	**2020** Number
Surgery for ovarian & tubal cancer	90	88	69	88
Surgery for corpus cancer	98	87	87	87
Surgery for vulvar cancer	17	22	22	22
Radical hysterectomy*	74	56	56	56
Modified radical hysterectomy*	4	4	4	4
Abandoned hysterectomy*	-	-	-	-
Radical parametrectomy*	2	-	-	-
Laparoscopic radical hysterectomy*	3	3	3	3
NOTES assisted vaginal hysterectomy	2	2	2	2
NOTES assisted extrafascial hysterectomy	1	-	-	-
Laparoscopic radical parametrectomy*	-	-	-	-
Total laparoscopic hysterectomy	1	2	2	2
CKC	-	-	-	-
LEEP	116	89	115	87
Colposcopy	537	463	470	627

* with pelvic lymphadenectomy

CKC = Cold knife conization

LEEP = Loop electrosurgical excision procedure

NOTES = Natural orifice transluminal endoscopic surgery

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	6	2.6
31-40	35	15.4
41-50	47	20.6
51-60	66	28.9
61-70	56	24.6
71-80	14	6.1
≥ 81	4	1.8
Total	**228**	**100**

Minimum age 26 years, Maximum age 83 years
Mean age 53.7 ±12.6 years

TABLE 3: Cancer of the Cervix: Parity Distribution

Parity	Number	Percent
0	25	11
1	56	24.6
2	76	33.3
3	29	12.7
4	19	8.3
5	8	3.5
6	6	2.6
7	4	1.8
8	1	0.4
unknown	4	1.8
Total	**228**	**100**

TABLE 4: Cancer of the Cervix: Stage Distribution

Stage	Number	Percent
I	51	22.4
II	62	27.2
III	78	34.2
IV	28	12.3
Recurrent	2	0.9
CIS	1	0.4
HSIL	3	1.3
Unstaged	3	1.3
Total	**228**	**100**

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

	Stage	**Number**	**Percent**
I	IA	1	0.4
	IA1	10	4.4
	IA2	4	1.8
	IB	1	0.4
	IB1	16	7.0
	IB2	8	3.5
	IB3	11	4.8
II	IIA	4	1.8
	IIA1	1	0.4
	IIA2	7	3.1
	IIB	48	21.1
	IIB2	1	0.4
	IIC	1	0.4
III	III	1	0.4
	IIIA	3	1.3
	IIIB	31	13.6
	IIIC	2	0.9
	IIIC1	34	14.9
	IIC2	7	3.1
IV	IVA	11	4.8
	IVB	17	7.5
Recurrent		2	0.9
CIS		1	0.4
HSIL		3	1.3
Unstaged		3	1.3
	Total	**228**	**100**

CIS = Carcinoma in situ HSIL = High-grade squamous intraepithelial lesion

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

Stage	Number Negative HIV (%)	Number Positive HIV (%)	Number not done (%)	Total
IA	1 (0.4)	0 (0)	0 (0)	**1 (0.4)**
IA1	8 (3.5)	1 (0.4)	1 (0.4)	**10 (4.4)**
IA2	4 (1.8)	0 (0)	0 (0)	**4 (1.8)**
IB	1 (0.4)	0 (0)	0 (0)	**1 (0.4)**
IB1	14 (6.1)	0 (0)	2 (0.9)	**26 (11.4)**
IB2	7 (3.1)	0 (0)	1 (0.4)	**8 (3.5)**
IB3	11 (4.8)	0 (0)	0 (0)	**11 (4.8)**
IIA	2 (0.9)	0 (0)	2 (0.9)	**4 (1.8)**
IIA1	1 (0.4)	0 (0)	0 (0)	**1 (.4)**
IIA2	6 (2.6)	0 (0)	1 (0.4)	**7 (3.1)**
IIB	34 (14.9)	5 (2.2)	9 (0)	**48 (21.1)**
IIB2	1(0.4)	0 (0)	0 (0)	**1(0.4)**
IIC	1(0.4)	0 (0)	0 (0)	**1(0.4)**
III	0 (0)	0 (0)	1 (0.4)	**1 (0.4)**
IIIA	3 (1.3)	0 (0)	0 (0)	**3 (1.4)**
IIIB	25 (11)	3 (1.4)	3 (1.3)	**31 (13.6)**
IIIC	1 (0.4)	0 (0)	1 (0.4)	**2 (0.9)**
IIIC1	26 (11.4)	3 (1.3)	5 (2.2)	**34 (14.9)**
IIIC2	6 (2.6)	0 (0)	1 (0.4)	**7 (3.1)**
IVA	10 (4.4)	0 (0)	1 (0.4)	**11 (4.8)**
IVB	12 (5.3)	0 (0)	5 (2.2)	**17 (7.6)**
CIS	0 (0)	0 (0)	1 (0.4)	**1 (0.4)**
HSIL	2 (0.9)	1 (0.4)	0 (0)	**3 (1.3)**
Recurrent	0 (0)	0 (0)	2 (0.9)	**2 (0.9)**
Unstaged	1 (0.4)	0 (0)	2 (0.9)	**4 (1.8)**
Total	**177 (77.6)**	**13 (5.7)**	**38 (16.7)**	**228 (100)**

HIV = Human immunodeficiency virus CIS = Carcinoma in situ

HSIL = High-grade squamous intraepithelial lesion

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

Histological Type	Number	Percent
Squamous cell carcinoma	**172**	**75.44**
Well differentiated	3	1.31
Moderately differentiated	102	44.74
Poorly differentiated	49	21.50
No defined differentiation	18	7.89
Adenocarcinoma	**34**	**14.91**
Adenosquamous	**3**	**1.31**
Small cell NE	**1**	**0.44**
Poorly differentiated CA	**1**	**0.44**
HSIL, CIS	**8**	**3.51**
AIS	**1**	**0.44**
Unknow	**8**	**3.51**
Total	**228**	**100**

NE = Neuroendocrine
CA = Carcinoma
HSIL = High-grade squamous intraepithelial lesion
CIS = Carcinoma in situ
AIS = Adenocarcinoma in situ

TABLE 8: Treatment of Cancer of the Cervix

Treatment	Number	Percent
Surgery alone		
TAH	6	2.6
Subtotal hysterectomy	1	0.4
RHPL	19	8.3
Modified RHPL	1	0.4
Laparoscopic hysterectomy	1	0.4
Chemotherapy alone	**11**	4.8
Concurrent chemoradiation+ brachytherapy	**102**	44.7
RT + brachytherapy	**28**	12.3
Brachytherapy	3	1.3
Combined treatment		
Abandon hysterectomy + CCRT	4	1.8
TAH + RT	1	0.4
TAH + brachytherapy	4	1.8
TAH + CCRT	4	1.8
RHPL+ sequential CMT	2	0.9
RHPL + brachytherapy	2	0.9
RHPL + CCRT + brachytherapy	20	8.8
RHPL + CMT	2	0.9
RHPL + RT	5	2.2
BSO + CMT	2	0.9
Extended hysterectomy with BPL + CCRT+ HDR	1	0.4
Others		
Follow-up	5	2.2
Denied treatment	1	0.4
Refer to another hospital for chemotherapy	3	1.3
Total	**228**	**100**

TAH	Total abdominal hysterectomy
RHPL	Radical hysterectomy with bilateral pelvic lymphadenectomy
RT	Radiation therapy
CCRT	Concurrent chemoradiation
CMT	Chemotherapy
BSO	Bilateral salpingo-oophorectomy
BPL	Bilateral pelvic lymphadenectomy
HDR	High dose-rate brachytherapy

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	2	3.0
21-30	9	13.4
31-40	2	3.0
41-50	8	11.9
51-60	20	29.9
61-70	17	25.4
71-80	6	9.0
>80	3	4.5
Total	**67**	**100**

Minimum age 12 years, Maximum age 87 years
Mean age 53.7 ± 16.9 years

TABLE 10: Cancer of the Ovary: Parity Distribution

Parity	Number	Percent
0	29	43.29
1	5	7.46
2	19	28.36
3	8	11.94
4	1	1.49
5	1	1.49
8	1	1.49
Unknown	3	4.48
Total	**67**	**100**

TABLE 11: Cancer of the Ovary: Histological Distribution

Histology	Number	Percent
Epithelium	56	83.6
Germ cell	6	9.0
Sex cord-stromal	4	6.0
Other	1	1.5
Total	**67**	**100**

TABLE 12: Epithelial Ovarian Cancer: Histological Subtype Distribution

Histological Subtype	Number	Percent
Serous adeno CA	11	19.6
Serous LMP	1	1.8
Clear cell CA	10	17.9
Endometrioid CA	4	7.1
Mucinous adeno CA	2	3.6
Mucinous LMP	12	21.4
Adeno CA	12	21.4
SCCA arising in mature teratoma	1	1.8
mixed mucinous and serous	2	3.6
Steroid cell tumor	1	1.8
Total	**56**	100

CA = Carcinoma LMP = Low malignant potential
NE = Neuroendocrine SCCA = Squamous cell carcinoma

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

Histological Subtype	Number	Percent
Immature teratoma	3	42.8
Yolk sac	2	28.6
Mucinous tumor + mature teratoma	1	14.3
Immature teratoma + yolk sac	1	14.3
Total	**7**	**100**

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

Subtype	Number	Percent
Adult granulosa cell tumor	1	25
Stroma ovarii	1	25
Sertori-Leydig cell tumor	1	25
Unclassified sex cord stromal tumor	1	25
Total	**4**	**100**

TABLE 15: Epithelial Ovarian Cancer: Stage Distribution

Stage	Number	Percent
IA	4	7.1
IC	1	1.8
IC1	8	14.3
IC2	5	8.9
IC3	2	3.6
II	1	1.8
IIB	3	5.4
IIIA2	3	5.4
IIIC	6	10.7
IVB	2	3.6
Advanced stage	9	16
Not staged	12	21.4
Total	**56**	**100**

TABLE 16: Germ Cell Ovarian Cancer: Stage Distribution

Stage	Number	Percent
IA	3	42.8
IC1	1	14.3
IC2	1	14.3
IIB	1	14.3
IIIC	1	14.3
Total	**7**	**100**

TABLE 17: Sex cord-stromal tumor: Stage Distribution

Stage	Number	Percent
IC2	2	50
IC3	1	25
Unstaged	1	25
Total	**4**	**100**

TABLE 18: Ovarian Cancer: Stage and Histology Distribution

	Epithelial	Percent	Germ cell	Percent	Sex cord stromal tumor	Percent
IA	4	7.1	3	42.8	-	-
IC	1	1.8	-	-	-	
IC1	8	14.3	1	14.3	-	-
IC2	5	8.9	1	14.3	2	50
IC3	2	3.6	-	-	1	25
II	1	1.8	-	-	-	-
IIB	3	5.4	1	14.3		-
IIIA2	3	5.4	-	-	-	-
IIIC	6	10.7	1	14.3	-	-
IVB	2	3.6	-	-	-	-
Advanced stage	9	16.1	-	-	-	-
Unstaged	12	21.4	-	-	1	25
Total	**56**	**100**	**7**	**100**	**4**	**100**

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

Treatment	Number	Percent
Complete SSP with adjuvant chemotherapy	9	13.4
Complete SSP without adjuvant chemotherapy	4	6.0
Complete SSP with loss to follow-up	1	1.5
Incomplete SSP with adjuvant chemotherapy	3	4.5
Incomplete SSP without adjuvant chemotherapy	20	29.9
NAC + Incomplete SSP with adjuvant chemotherapy	6	9.0
Chemotherapy only	4	6.0
Close follow-up	18	26.9
Refer to other hospital	1	1.5
Loss to follow-up	1	1.5
Total	**67**	**100**

SSP = Surgical staging procedure
NAC = Neoadjuvant chemotherapy

TABLE 20: Ovarian Cancer: Outcome of Treatment

Outcome	Number	Percent
Under follow-up without disease	35	52.2
During treatment	15	22.4
During treatment with progression/persistence of disease	2	3.0
Lost to follow-up	9	13.4
Refer to provincial hospital for chemotherapy	6	9.0
Total	**67**	**100**

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
31-40	2	2.5
41-50	12	14.8
51-60	38	46.9
61-70	24	29.6
71-80	5	6.2
Total	**81**	**100**

Minimum age 35 years, Maximum age 78 years
Mean age 57.90±8.2 years

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

Menopausal Status	Number	Percent
Yes	62	76.5
No	19	23.5
Total	**81**	**100**

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

Medical disease	Number	Percent
None	**18**	22
Hypertension	**6**	7
Hypertension + PVC	**1**	1
Hypertension + DM	**4**	5
Hypertension + CKD	**2**	2
Hypertension + DM + dyslipidemia	**7**	9
Hypertension + DM + dyslipidemia + stroke	**1**	1
Hypertension + DM + Thyrotoxicosis	**1**	1
Hypertension + DM + dyslipidemia + SVT	**1**	1
Hypertension + dyslipidemia	**9**	11
Hypertension + dyslipidemia + old CVA	**1**	1
Hypertension + DLP, gout, hypothyroid	**1**	1
Hypertension + DLP, thyroid, HBV cirrhosis, NASH	**1**	1
Hypertension +HBV infection	**1**	1
Hypertension + dyslipidemia + CKD	**1**	1
Hypertension + dyslipidemia + AF	**1**	1
Hypertension + AF + CHF + MR + DVT + DVD + TR	**1**	1
HBV infection	**1**	1
DM	**3**	4
DM + dyslipidemia + asthma + fatty liver	**1**	1
Rheumatoid arthritis + grave's disease	**1**	1
Dyslipidemia	**4**	5
Dyslipidemia + GERD	**1**	1
Osteoporosis	**1**	1
History of CA breast	**3**	4
migraine	**1**	1
MDD	**1**	1
Hypothyroid	**1**	1
Dyspepsia	**1**	1
Asthma	**2**	2
History of CA colon	**1**	1
History of CA rectum	**1**	1
History of Thyrotoxicosis	**1**	1
Total	**81**	**100**

AF = Atrial fibrillation
CA = Cancer
CHF = Congestive heart failure
CKD = Chronic kidney disease
CVA = Cerebrovascular accident
DM = Diabetes mellitus
DVD = Double vessel disease
DVT = Deep vein thrombosis
TR = Tricuspid regurgitation
ESRD = End-stage renal disease
GERD = Gastroesophageal reflux disease
HBV = Hepatitis B virus
IFG = Impaired fasting glucose
MDD =Major depressive disorder
MS = Mitral stenosis
MR = Mitral regurgitation
NASH = Non-alcoholic steatohepatitis
PVC = Premature ventricular contraction
SVT = Supraventricular tachycardia

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

Parity	Number	Percent
0	24	29.6
1	10	12.3
2	31	38.3
3	8	9.9
4	3	3.7
5	2	2.5
6	1	1.2
unknown	2	2.5
Total	**81**	**100**

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

	Stage	Number	Percent
I	IA	28	34.6
	IB	12	14.8
	IC	1	1.2
II	II	2	2.5
	IIB	1	1.2
III	IIIA	6	7.4
	IIIB	1	1.2
	IIIC	1	1.2
	IIIC1	9	11.1
	IIIC2	9	11.1
IV	IVB	8	9.9
Advanced stage		1	1.2
Recurrent		1	1.2
Unstaged		1	1.2
Total		**81**	**100**

TABLE 26: Cancer of the Uterine Corpus: Histologic Distribution

Histology Type	Number	Percent
Endometrioid adeno CA		
Grade I	24	29.6
Grade II	19	23.5
Grade III	13	16
Carcinosarcoma	2	2.5
Serous adenoCA	7	8.6
Mixed type	8	9.9
Clear cell adenoCA	2	2.5
Leiomyosarcoma	2	2.5
High grade adeno CA	2	2.5
Poor differentiated adeno CA	1	1.2
PEComa	1	1.2
Total	**81**	**100**

CA = Carcinoma
PEComa = Perivascular epithelioid cell tumor

TABLE 27: Treatment of Corpus Cancer

Treatment	Number	Percent
Complete SSP	11	13.6
Complete SSP + Chemotherapy	5	6.2
Complete SSP + Radiation therapy + Brachytherapy	2	2.5
Complete SSP + Chemotherapy+ Brachytherapy	2	2.5
Complete SSP + Brachytherapy	12	14.8
Complete SSP +WPRT	2	2.5
Complete SSP +EBRT	3	3.7
Complete SSP + Sequential CCRT	16	19.8
Incomplete SSP	8	9.9
Incomplete SSP + Chemotherapy	10	12.3
Incomplete SSP + Chemotherapy+ Brachytherapy	1	1.2
Incomplete SSP + Radiation therapy + Brachytherapy	2	2.5
Incomplete SSP +EBRT	2	2.5
Incomplete SSP + Brachytherapy	1	1.2
Incomplete SSP +WPRT	1	1.2
Chemotherapy	2	2.5
Chemotherapy+RT+ Brachytherapy	1	1.2
Total	**81**	**100**

SSP = Surgical staging procedure
WPRT = Whole pelvis radiotherapy
EBRT = External beam radiotherapy
CCRT = Concurrent chemoradiation
RT = Radiation therapy

TABLE 28: Outcome of Treatment of Corpus Cancer

Outcome	Number	Percent
Under follow-up without disease	37	45.7
During treatment	23	28.4
During treatment with progression/persistence of disease	3	3.7
During treatment with partial response	1	1.2
Refer to provincial hospital for chemotherapy	9	11.1
Best supportive care	3	3.7
Loss to follow-up	3	3.7
Dead	2	2.5
Total	**81**	**100**

Cancer of the Vulva

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

TABLE 29: Cancer of the Vulva: Age Distribution

Age	Number	Percent
≤40	1	6.7
41-50	3	20
51-60	2	13.3
61-70	6	40
>71	3	20
Total	**15**	**100**

Minimum age 39 years, Maximum age 91 years
Mean age 61.7 ± 14.7 years
*2 cases of Paget's disease

TABLE 30 : Cancer of the Vulva: Stage Distribution

Stage	Number	Percent
HSIL	4	26.6
IB	4	26.6
II	1	6.7
III	1	6.7
IIIA	2	13.3
IVB	1	6.7
Invasive	1	6.7
Unstaged	1	6.7
Total	**15**	**100**

TABLE 31: Cancer of the Vulva: Histological Type Distribution

Histological Type distribution	Number	Percent
Squamous cell carcinoma		
Well differentiated	3	20
Moderately differentiated	3	20
Poorly differentiated	1	6.7
HSIL	5	33.3
Malignant melanoma	1	6.7
Paget's disease	2	13.3
Total	**15**	**100**

HSIL = High-grade squamous intraepithelial lesion

TABLE 32: Treatment of Cancer of the Vulva

Treatment	**Number**	**Percent**
Radical local excision	1	6.7
WLE	5	33.2
WLE + CMT	1	6.7
WLE + Neoadjuvant(CMT) + RT	1	6.7
WLE + BGND + Neoadjuvant(CMT) + RT	2	13.3
WLE + BGND + RT	2	13.3
WLE + unilateral groin node dissection	1	6.7
Vulva biopsy	1	6.7
Vulva biopsy + Radical RT + CMT	1	6.7
Total	**15**	**100**

WLE = Wide local excision
CMT = Chemotherapy
NAC = Neoadjuvant chemotherapy
RT = Radiation therapy
BGND = Bilateral groin node dissection

Cancer of the Vagina

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

TABLE 33: Cancer of the Vagina

No	Age	Stage	Histology	Treatment	Outcome
1	31	IIIC	Clear cell adenocarcinoma	CMT+CCRT	Good, under follow-up
2	55	IIIC	Pagetoid melanoma cells	WLE + BGND TAH + BSO > (refer to onco med) → pembrolizumab	During treatment with progression of disease (lung metastasis)
3	59	IA	MD, SCCA	WPRT + VBT	Good, under follow-up
4	60	Recurrent	MD, SCCA	CMT	During treatment
5	75	IVB	PD, carcinoma	CMT + RT	Progression of disease (lung + liver metastasis)

CMT = Chemotherapy
CCRT = Concurrent chemoradiation
WLE = Wide local excision
BGND = Bilateral groin node dissection
TAH = Total abdominal hysterectomy
BSO = Bilateral salpingo-oophorectomy
MD = Moderately differentiated
PD =Poorly differentiated
SCCA = Squamous cell carcinoma
WPRT = Whole pelvis radiotherapy
VBT = Vaginal brachytherapy
CMT = Chemotherapy
RT = Radiation therapy

Cancer of the Fallopian Tube

TABLE 34: Cancer of the Fallopian Tube 2020

Data	Case 1	Case 2	Case 3
Age	40	68	69
Marital status	Married	Married	Married
Parity	1-0-0-1	1-0-0-1	1-0-1-1
Presenting symptoms	Pelvic mass	Pelvic pain	Abnormal uterine bleeding
Stage	Advanced	IIA	IIIC
Histology	High grade serous adenoCA	High grade serous adenoCA	High grade serous adenoCA
Treatment	NAC: PTx3 →TAH, BSO, partial omentectomy → PTx3 → PR → Gemcitabine → PD → Taxol	TAH, BSO, peritoneal washing + partial omentectomy + adjuvant PTx 6	TAH, BSO + partial omentectomy + ascites collection + adjuvant PTx6
Outcome	During treatment with progression of disease	Good, under follow-up 3 months	During treatment

Data	Case 4	Case 5	Case 6
Age	62	39	63
Marital status	Married	Married	Married
Parity	6-0-3-6	0-0-0-0	2-0-0-2
Presenting symptoms	Pelvic pain	Abdominal distension	Pelvic pain
Stage	Advanced	IIIA2	IC2
Histology	High grade serous adenoCA	High grade serous adenoCA	High grade serous adenoCA
Treatment	NAC: PT x3 →TAH, BSO, debulking tumor at omentum, lysis adhesion → adjuvant PT	TAH, BSO, BPND, PAND Partial omentectomy, peritoneal collection, appendectomy + adjuvant PTx 6	RHPL, BSO, BPND, partial omentectomy + adjuvant PTx6
Outcome	During treatment	During treatment	Good, under follow-up 3 month

Data	Case 7	Case 8	Case 9
Age	61	58	68
Marital status	Married	NO	Married
Parity	2-0-0-2	0-0-0-0	2-0-0-2
Presenting symptoms	Weight loss	Pelvic pain	Pelvic mass, abdominal distension
Stage	IIIC	IA	Advanced
Histology	High grade serous adenoCA	High grade serous adenoCA	High grade serous adenoCA
Treatment	TAH, BSO, ascites collection, peritoneal biopsy → adjuvant PTx6	TAH, Lt SO, lysis adhesion, Partial omentectomy, peritoneal washing → Rt SO + adjuvant PTx6	BSO, partial omentectomy, ascites collection + adjuvant PTx1 → Gemcitabine
Outcome	Good, under follow-up	During treatment	During treatment

Data	Case 10	Case 11
Age	83	62
Marita status	Married	Married
Parity	3-0-0-3	2-0-0-2
Presenting symptoms	Pelvic mass	Ascites, abdominal distension, dyspepsia
Stage	IIIA2	IIIB
Histology	High grade serous adenoCA	High grade serous adenoCA
Treatment	TAH, BSO, ascites collection, peritoneal biopsy → adjuvant PT	TAH, Lt SO, debulking tumor partial omentectomy, appendectomy, small bowel resection + adjuvant PT
Outcome	During treatment	During treatment

BPND = Bilateral pelvic node dissection
BPNS = Bilateral pelvic node sampling
BSO = Bilateral salpingo-oophorectomy
CA = Carcinoma
Lt = Left
NAC = Neoadjuvant chemotherapy
PAND = Para-aortic node dissection
PT = Paclitaxel and Carboplatin
PD = Progressive disease
PR = Partial response
RHPL = Radical hysterectomy with pelvic lymphadenectomy
Rt = Right
SO = Salpingo-oophorectomy
TAH = Total abdominal hysterectomy

Cancer of the Peritoneum

TABLE 35: Cancer of the Peritoneum 2020

Data	**Case 1**	**Case 2**
Age	56	71
Marital status	Married	Married
Parity	1-0-2-1	3-0-0-3
Presenting symptoms	History of CA breast	Dyspepsia, ascites
Stage	Advanced	IVB
Histology	High grade serous adenoCA	High grade serous adenoCA
Treatment	TAH with BSO → adjuvant PT	NAC: PT → TAH with Left SO with partial omentectomy → adjuvant Carboplatin
Outcome	During treatment	During treatment

CA = Carcinoma
TAH = Total abdominal hysterectomy
BSO = Bilateral salpingo-oophorectomy
PT = Paclitaxel and Carboplatin
NAC = Neoadjuvant chemotherapy
SO = Salpingo-oophorectomy

Gestational Trophoblastic Disease

- Gestational Trophoblastic Tumor

TABLE 36: Gestational Trophoblastic Tumors in 2020

No	Age (year)	Initial hCG titer	Prognosis Classification	Diagnosis	FIGO	Treatment	Result
1	39	258000	MGTT, poor prognosis, kidney metastasis	GTN	IV	EMA-CO	During treatment
2	57	94127	NMGTT	Molar pregnancy	Unstaged	Follow-up hCG	Refer to other hospital for Follow-up hCG
3	49	264000	MGTT, poor prognosis, Lung metastasis	GTN	III	EMA-CO	During treatment
4	26	115067	NMGTT	GTN	I	TAH → MTX-FA x6 → Actinomycin D	During treatment
5	39	122	NMGTT	GTN	I	MTX-FA x4 cycles	Good under Follow-up
6	24	259956	NMGTT	GTN	I	MTX-FA x4 cycles	Good under Follow-up
7	32	826468	NMGTT	Molar pregnancy	Unstaged	Follow-up hCG	Good under Follow-up
8	25	607644	NMGTT	Molar pregnancy	Unstaged	Follow-up hCG	Good under Follow-up
9	42	2250000	MGTT, poor prognosis, lung metastasis	GTN	III	MTX-FA x7 cycles EMA-EP x2 cycles ICE x1 cycle	During treatment

EMA-CO = Etoposide + Methotrexate + Actinomycin D + Cyclophosphamide + Vincristine

EMA-EP = Etoposide + Methotrexate + Actinomycin D + Etoposide + Cisplatin

GTN = Gestational trophoblastic tumor

hCG = Human chorionic gonadotropin

ICE = Ifosfamide + Carboplatin + Etoposide

MGTT = Metastatic gestational trophoblastic tumor

MTX-FA = Methotrexate + Folinic acid

NMGTT = Non-metastatic gestational trophoblastic tumor

SECTION II

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

Medical Personnel and Facilities

TABLE 37: Medical Personnel and Facilities in Division of Gynecologic Oncology, Chiang Mai University

Personnel and Facilities	Number
Medical doctor	8
General nurse	21
Practical nurse	11
Helper	8
Research nurse	2
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

- Jongpeeti Wudtisan, MD
- Thunwipa Tuscharoenporn, MD
- Muangloei Rungoutok, MD

2nd Year Fellow

- Santipap Srisomboon, M.D.
- Khemmanat Sanguanwongthong, MD
- Atita Ruengsaen, 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 38: Diagnostic Procedures and Operations for Cervical Neoplasia

Procedures & Operations	Number
Colposcopy	627
LEEP	87
Simple hysterectomy	14
Modified hysterectomy & PL	1
Radical hysterectomy & PL	49
Laparoscopic hysterectomy	1

LEEP = Loop electrosurgical excision procedure
PL = Pelvic lymphadenectomy

TABLE 39: Operations for Ovarian, Corpus, and Vulvar Cancer

Operations	Number
CRS for ovarian cancer	43
CRS for fallopian tube cancer	10
Radical hysterectomy & PL for fallopian tube cancer	1
CRS for peritoneal cancer	2
Surgical staging for corpus cancer	42
Subtotal hysterectomy for corpus cancer	1
Laparoscopic hysterectomy for corpus cancer	5
Radical local excision for vulvar cancer	1
Wide local excision & BGND for vulvar cancer	6
Wide local excision for vulvar cancer	5
Wide local excision & unilateral groin node dissection for vulvar cancer	1

CRS = Cytoreductive surgery
PL = Pelvic lymphadenectomy
BGND = Bilateral groin node dissection

PUBLICATIONS & PRESENTATIONS

2020

Survival Outcomes of Sex Cord-stromal Tumors of the Ovary

Somaketarin K, **Tantipalakorn C**, **Charoenkwan K**, **Suprasert P**, **Srisomboon J.**

Objective: To evaluate the role of retroperitoneal lymphadenectomy and the survival outcomes of malignant ovarian sex cord-stromal tumors (SCSTs).

Materials and Methods: Patients with malignant SCSTs of the ovary who underwent surgery between January 2005 and March 2017 were retrospectively reviewed. The authors analyzed stage, histology, clinical presentation, type of surgery, the role of lymphadenectomy, five-year disease-free survival, and five-year overall survival.

Results: Fifty-four patients with malignant SCSTs of the ovary were identified in this study. Retroperitoneal lymph node dissection was performed in 30 (55.6%) patients. No lymph node metastasis was detected. At the median follow-up time of 35 months, the five-year disease-free survival and the five-year overall survival was 88.7% and 92.4%, respectively.

Conclusion: The survival outcomes of women with ovarian sex cord-stromal malignancies are favorable. No lymph node metastasis is detected in this study. Retroperitoneal lymphadenectomy may be omitted in a surgical staging procedure for these patients.

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DOI: 10.31083/J.EJGO.2020.04.4976

Pre-operative Assessment and Neoadjuvant Therapy Prior to Surgery for Advanced Endometrial Cancer: Survey of Practice Among Thai Gynecologic Oncologists

Pitakkarnkul S, Chanpanitkitchot S, **Srisomboon J**, Tangjitgamol S.

Objective: To determine the methods that Thai gynecologic oncologists used to assess the operability and neoadjuvant treatment in apparently advanced endometrial cancer.

Materials and Methods: This study was a part of the national survey project by the Thai Gynecologic Cancer Society on the management of gynecologic cancer in Thailand. All Thai gynecologic oncologists who had been in practice for at least 1 year were invited to respond about their practice to the online questionnaire open from August to October, 2019. Data on the methods to assess the operability of advanced endometrial cancer and the type of neoadjuvant treatment before surgery were abstracted from the database and analyzed.

Results: Among 170 respondents, 48.8% performed physical examination along with imaging study to assess the operability whereas 25.9% relied only on an imaging study. The most common imaging study was a computed tomography scan (84.1%). The respondents who worked in training hospitals used special imaging studies (aside from ultrasonography) significantly more frequently than those in service-only hospitals, 95.3% vs. 84.5% ($p = 0.022$). Regarding the neoadjuvant therapy before surgery, chemotherapy (58.7%), chemotherapy combined with radiation (41.9%), and radiation therapy alone (33.5%) were selected as modes of treatment. Radiation therapy was selected as an option more frequently among the respondents working in government and in training hospitals compared to private and service-only hospitals: 36.2% vs. 5.6% ($p = 0.009$) and 40.7% vs. 25.0% ($p = 0.022$), respectively. Combined radiation and chemotherapy were more frequently selected among the respondents who had been in practice >5 years (48.5%) vs. <5 years (31.0%), $p = 0.022$.

Conclusion: An assessment of operability and neoadjuvant therapy before surgery in advanced endometrial cancer among the Thai gynecologic oncologists varied. These were influenced by the hospital's features and experience of the respondents. © Journal of The Medical Association of Thailand

Published in: Journal of the Medical Association of Thailand. 2020;103(7):43-48.

Surgical Management for Ovarian Cancer: Survey of Practice Among Thai Gynecologic Oncologists

Chanpanitkitchot S, Tiyayon J, Kietpeerakool C, Tangjitgamol S, **Srisomboon, J**.

Objective: To describe the practice landscape among Thai gynecologic oncologists toward the surgical management of ovarian cancer obtained from the Thai Gynecologic Cancer Society (TGCS) Survey.

Material and Methods: The present study was a part of the national practice survey on the management of gynecologic cancer in Thailand. All Thai gynecologic oncologists were targeted for the TGCS survey. The present study analyzed data regarding the surgical treatment of ovarian cancer.

Results: Of 170 respondents, one-third of the respondents reported routinely assessing tumor volume and location by pre-operative imaging. Respondents in private and secondary hospitals were more likely to perform pre-operative imaging than those in governmental and tertiary hospitals (72.2% versus 34.2% and 71.4% versus 31.7%). Most of the respondents (94.7%) reported routinely performing lymphadenectomy in presumed early-stage cancer. In the advanced-stage, most of the respondents (71.3%) reported selectively performing lymphadenectomy only in women with clinically suspicious metastasis or when optimal cytoreduction could be attained. Respondents with practice duration less than 5 years were less likely to routinely perform lymphadenectomy in women with advanced-stage disease compared to those with longer practice duration (14.1% versus 39.6%). The respondents with long duration of practice were more likely to perform secondary cytoreduction than those who had fewer experiences (77.8% versus 56.3%).

Conclusion: This survey indicated variations of some practices on the surgical treatment of ovarian cancer in Thailand including pre-surgical imaging assessment, a pattern of lymph node dissection, and secondary cytoreduction for recurrent disease.

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Retroperitoneal Lymph Node Surgical Evaluation for Endometrial Cancer: Survey of Practice Among Thai Gynecologic Oncologists

Chanpanitkitchot S, Tantitamit T, Chaowawanit W, **Srisomboon, J**, Tangjitgamol S.

Objective: To evaluate the current practice of lymph node evaluation during surgery in endometrial cancer patients.

Materials and Methods: This report was a part of the survey study by the Thai Gynecologic Cancer Society which assessed the practice of Thai gynecologic oncologists who had been in practice for at least one year. The web-based survey was conducted from August to October, 2019. Data on the practice of node resection (all vs. selective), pattern (systemic vs. sampling) and level of lymph node resection (pelvic only vs. pelvic and para-aortic nodes) as well as the number of retrieved lymph nodes in endometrial cancer patients were extracted from the database.

Results: From 170 gynecologic oncologists, who responded to the questionnaire, the duration of practice ranged from 1 to 42 years (median 5 years). Almost 90% and 84% worked in government hospitals or tertiary-level hospitals respectively, with 50.6% involved in gynecologic fellows training. All performed lymph node resection. The procedure was either when there were indications (57.1%), or generally performed in all patients (42.9%) which was more frequently practiced among the respondents who had been working for >5 years. The four most common features considered for nodal resection were tumor size, histopathology, grade, and myometrial invasion. Regarding the pattern of resection, 67.6% performed systemic dissection, all did it bilaterally, and 85.3% resected both pelvic and para-aortic nodes. No significant influences of the hospital's features or the respondents' experience on the pattern or level of lymph node surgery. Median numbers of pelvic and para-aortic nodes yielded per patient were 12 nodes (3 to 30 nodes) and 3 nodes (0 to 20 nodes), respectively. The respondents working in the government or training hospitals were more likely to have pelvic node retrieval >12 nodes whereas only the respondents who worked in training hospitals had >3 retrieved paraaortic nodes more frequently.

Conclusion: Variations in the practice of surgical lymph node evaluation in endometrial cancer patients were demonstrated among the Thai gynecologic oncologists. The differences lied on experience and the context of the working features of an individual.

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Pulmonary Recruitment Maneuver for Reducing Shoulder Pain after Laparoscopic Gynecologic Surgery: A Network Meta-Analysis of Randomized Controlled Trials

Kietpeerakool C, Rattanakanokchai S, Yantapant A, Roekyindee R, Puttasiri S, Yanaranop M, **Srisomboon J**.

Background: Shoulder pain is a common symptom following laparoscopic surgery. This systematic review was undertaken to assess updated evidence regarding the effectiveness and complications of the pulmonary recruitment maneuver (PRM) for reducing shoulder pain after laparoscopic gynecologic surgery.

Methods: A number of databases for randomized controlled trials (RCTs) investigating PRM for reducing shoulder pain were searched up to June 2019. Two authors independently selected potentially relevant RCTs, extracted data, assessed risk of bias, and compared results. Network meta-analyses were employed to simultaneously compare multiple interventions. Effect measures were presented as pooled mean difference (MD) or risk ratio (RR) with corresponding 95% confidence intervals (CI).

Results: Of the 44 records that we identified as a result of the search (excluding duplicates), eleven RCTs involving 1111 participants were included. Three studies had an unclear risk of selection bias. PRM with a maximum pressure of 40 cm H2O was most likely to result in the lowest shoulder pain intensity at 24 hours (MD -1.91; 95% CI -2.06 to -1.76) while PRM with a maximum pressure of 40 cm H2O plus intraperitoneal saline (IPS) appeared to be the most efficient at 48 hours (MD -2.09; 95% CI -2.97 to -1.21). The estimated RRs for analgesia requirement, nausea/vomiting, and cardiopulmonary events were similar across the competing interventions.

Conclusion: PRM with 40 cm H2O performed either alone or accompanied by IPS is a promising intervention for alleviating shoulder pain within 48 hours following gynecologic laparoscopy.

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Management of Advanced, Metastatic, and Recurrent Cervical Cancer: Survey of Practice Among Thai Gynecologic Oncologists

Achariyapota V, Pohthipornthawat N, Inthasorn P, Termrungruanglert W, **Srisomboon J**, Chanpanitkitchot S, Charakorn C, **Charoenkwan K**.

Objective: To evaluate the current practice of Thai gynecologic oncologists in the management of patients with advanced, metastatic, and recurrent cervical cancer.

Materials and Methods: This study was a part of the national practice survey on the management of gynecologic cancer in Thailand. All Thai gynecologic oncologists were targeted in the survey. This study retrieved the data regarding the practice of management of advanced-stage cervical cancer and recurrent disease.

Results: Of 170 respondents, 90% used combination platinum/paclitaxel chemotherapy as a first-line treatment for patients with advanced and recurrent diseases. The combination of chemotherapy was used in about 81.8% and 27.6% in first-line and further line treatments, respectively. Single cisplatin was used in 14.1% as the second-line. Palliative treatment without chemotherapy was considered increasingly after first-line treatment and significantly more likely to implement among service hospitals compared to the comparative setting (8.9% vs. 1.2%: p = 0.030). Up to 36.6% (30/82) of the respondents who worked in training hospitals preferred to use targeted therapy, i.e. bevacizumab compared to 21.3% (16/75) of respondents who worked in service hospitals (p = 0.04).

Conclusion: Combination platinum-based chemotherapy was commonly used as the first-line treatment for advanced and recurrent cervical cancer. The respondents in training hospitals were more likely to use targeted therapy than those in the service hospitals.

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Adjuvant Treatment After Surgery for Endometrial Cancer: Survey of Practice Among Thai Gynecologic Oncologists

Khunnarong J, Chanpanitkitchot S, Manusirivithaya S, Chaowawanit W, **Srisomboon J**, Tangjitgamol S.

Objective: To evaluate the practice of Thai gynecologic oncologists regarding the adjuvant treatment after surgery for endometrial cancer.

Materials and Methods: A web-based survey by the Thai Gynecologic Cancer Society was conducted from August to October, 2019 to assess the pattern of gynecologic cancer management of the Thai gynecologic oncologists. The respondents had to have at least 1 year of practice in this field and were currently working in the country. Data of practice on postoperative adjuvant treatment for each stage of endometrial cancer were retrieved and analyzed.

Results: The mean age of all 167 gynecologic oncologists who responded to the questionnaire was 41.0+8.26 years. No adjuvant treatment was selected in 40% of stage IA and 3% of stage IB whereas all responded one or more types of adjuvant treatments for stage II and over. Pelvic radiation was most commonly used for stage I-II. Brachytherapy was the most common mode of radiation for stage IA (57.5%) and IB (88.1%) whereas external pelvic beam irradiation was more common in stage II (38.9% without and 36.5% with brachytherapy). Only 2 to 8% reported chemotherapy use for stage I-II and increased to 80 to 97% in stage III-IV. Chemotherapy was reported as the sole therapy in 20% of stage III and 70% of stage IV whereas the remaining had combined chemotherapy and radiation. Extended field radiation was used in 15 to 30% of stage IIIA to IIIC1 and 62% in stage IIIC2.

Conclusion: Thai gynecologic oncologists used adjuvant therapy mainly according to the stage of endometrial cancer. The main treatment for stage I-II was radiation therapy, with chemotherapy in some patients. Chemotherapy was the major adjuvant treatment (80 to 90%) of stage III and almost all stage IV.

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Treatment of Recurrent Ovarian Cancer: Survey of Practice Among Thai Gynecologic Oncologists

Manchana T, Charakorn C, Lertkhachonsuk A, Tangjitgamol S, Chanpanitkitchote S, **Srisomboon J**.

Objective: To survey the practice among Thai gynecologic oncologists in the treatment of recurrent epithelial ovarian cancer.

Materials and Methods: This study was a part of the Thai Gynecologic Cancer Society (TGCS) national survey about the practice among Thai gynecologic oncologists. Their responses to 21 questions about the treatment of epithelial ovarian cancer were analysed.

Results: Among 258 gynecologic oncologists who met the inclusion criteria, 170 responded to the questionnaires (65.9%). Almost half of Thai gynecologic oncologists who participated in this survey reported that they performed surgery after recurrence of ovarian cancer, but in only 10% of their patients. Combination of platinum and paclitaxel was the most preferable regimen (90%) in recurrent platinum-sensitive epithelial ovarian cancer. The most common second-line chemotherapeutic regimen for recurrent platinum-resistant or platinum-refractory epithelial ovarian cancer patients was gemcitabine (53.5%) followed by pegylated liposomal doxorubicin (42.4%) and single paclitaxel (4.1%). Best supportive care was given more frequently after a failure from 2 or more regimens. If the patients did not respond to more than 3 chemotherapy regimens, 70% of the responders offered the best supportive care to their patients. The responders prescribed targeted therapy with the median number of 5% for their patients.

Conclusion: Chemotherapy was the most common treatment for recurrent ovarian cancer. Reimbursement by the Thai Universal Health insurance limited using various chemotherapeutic agents including targeted therapy. Best supportive care was wildly chosen as the treatment option in recurrent platinum-resistant epithelial ovarian cancer patients who failed more than 3 chemotherapy regimens.

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Working Situation and Problems in Practice of Thai Gynecologic Oncologists: Thai Gynecologic Cancer Society Survey

Tangjitgamol S, Chanpanitkitchot S, **Charoenkwan K**, **Srisomboon J**, Kasemsarn P, Temrungruanglert W, Linasmita V.

Objective: To assess working situation and problems related to work of Thai gynecologic oncologists.

Materials and Methods: The present study was a part of the Thai Gynecologic Cancer Society (TGCS) survey about clinical practice of the Thai gynecologic oncologists who had been in practice in Thailand for at least 1 year. A web-based survey was opened for response between August and October 2019. This study abstracted general data of the gynecologic oncologists, hospital features, working features and problems related to work or personal problems.

Results: Among 258 gynecologic oncologists who met inclusion criteria, 170 responded to the questionnaires (65.9%). The mean age was 41.1+8.25 years, with nearly two thirds (63.5%) being female. Median duration of practice was 5 years (range 1 to 42 years). Majority (over 80%) worked in the government or tertiary-level hospitals. Approximately half (50.6%) were hospitals involving gynecologic oncology fellowship training. The number of gynecologic oncologists in each hospital ranged from 1 to 19 (median 6), with 28.2% of the respondents reporting inadequacy. The inadequacy was reported to be significantly more frequent in service-only hospitals (especially in government and tertiary-level hospitals) compared to training hospitals. Among 75.9% of the respondents who reported having problems, the most common was work-related (68.2%) especially over-workload or inadequate colleagues. Financial problem was encountered more frequently in government or training hospitals.

Conclusion: Most respondents worked in government or tertiary hospitals, whereas half involved in fellowship training. A wide range of numbers of gynecologic oncologists was reported in each institution of the respondents, with slightly more than one-fourth reporting inadequacy. Approximately three-fourths of the respondents reported one or more problems, being work-related as the most common.

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Development of Abnormal Bowel Function After Simple Hysterectomy

Phangsuwan P, **Suprasert P**.

Objective: To evaluate patient bowel function following trans-abdominal hysterectomy (TAH).

Materials and Methods: Patients scheduled for TAH were interviewed using a bowel function questionnaire at day 1 preoperatively and at 1, 3 and 6 months postoperatively. The questionnaire consisted of 18 items pertaining to bowel function, each with 5 score levels (0 to 4). A low score indicated fewer symptoms, with the sum of possible scores ranging from 0-72.

Results: Seventy-four patients were recruited between March and September 2017. The mean patient age was 51.3 years and the most common diagnosis was myoma (41.9%) followed by endometrial cancer (18.9%), ovarian cancer (12.2%) and ovarian tumor (12.2%). Previous cesarean section was reported in 24.3% of patients, while 30% underwent lysis of adhesions. Gastrointestinal medication and laxatives were given to 70% and 2.7% of patients, respectively. The mean sum of the score for the questionnaire was 1.91, 0.81, 0.54 and 0.46, respectively, for preoperative day one and for 1, 3 and 6 months postoperatively. The mean scores for the 3 post-operative time points were significantly lower than that of the preoperative period.

Conclusion: Most patients who underwent TAH did not develop abnormal bowel function after surgery. Moreover, patients who initially had bowel dysfunction showed significant improvement post-hysterectomy.

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Prevalence of Tissue BRCA Gene Mutation in Ovarian, Fallopian Tube, and Primary Peritoneal Cancers: A Multi-institutional Study

Lertkhachonsuk AA, **Suprasert P**, Manchana T, Kittisiam T, Kantathavorn N, Chansoon T, Khunamornpong S, Pohthipornthawat N, Tangjitgamol S, Luasiripanthu T, Teerapakpinyo C, Shuangshoti S, Iemwimangsa N, Chantratita W.

Background and objective: Ovarian, fallopian tube, or primary peritoneal cancer patients with BRCA gene mutation have enhanced sensitivity to platinum-based regimens and PARP inhibitors. However, the knowledge regarding BRCA mutation in Thai patients is limited. This study aimed at identifying the prevalence and characteristics of somatic and germline BRCA 1 and 2 mutations in Thai patients with these cancers.

Materials and Methods: The paraffin blocks of tumors with histology of high grade serous, high grade endometrioid, or clear cell carcinoma obtained between June 2016 and December 2017 were analyzedto evaluate BRCA mutation using next-generation sequencing system. Blood or normal tissue paraffin blocks of positive patients were further tested for germline BRCA mutation.

Results: Tissue paraffin blocks of 178 patients were collected but only 139 were analyzed. Positive BRCA mutation was identified in 24 patients (17.3%): BRCA1 in 13 cases, BRCA2 in 10 cases, and BRCA1 and 2 in the rest one. Germline mutation study in blood or normal tissue in 23 positive patients revealed BRCA mutation in 14 cases, BRCA1 in 8 cases and BRCA 2 in 6 cases. Overall, the prevalence of somatic and germline mutation was 6.5% (9 out of 138 patients) and 8.7% (14 out of 138 patients), respectively. The most common histology associated with BRCA mutation was high grade serous cancer (27.3%). No significant difference was found between patients with or without BRCA mutation in terms of stage, outcome, platinum status, and survival outcome.

Conclusion: BRCA mutation was demonstrated in less than 10% of Thai ovarian cancer patients. Higher rate of mutation was found in high grade serous cancer.

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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.

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Potential Predictors for Chemotherapeutic Response and Prognosis in Epithelial Ovarian, Fallopian Tube and Primary Peritoneal Cancer Patients Treated With Platinum-based Chemotherapy

Jeerakornpassawat D, **Suprasert P**.

Objective: This study aimed to investigate the potential predictive factors for platinum resistance and poor prognosis in epithelial ovarian, fallopian tube, and primary peritoneal cancer treated with platinum-based chemotherapy.

Methods: Medical records of 306 patients with the above mentioned cancers treated with platinum-based chemotherapy between 2007 and 2017 were retrospective reviewed. Clinical data, preoperative neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), platinum-free interval, and survival time were recorded. NLR, PLR, and cancer antigen 125 (CA125) levels were calculated for an optimal cutoff point using receiver operating characteristic curves. The clinicopathological variables were compared using univariate and multivariate analyses to identify independent predictive factors for platinum resistance and poor survival outcomes.

Results: The optimal cutoff points for NLR, PLR, and CA125 were 3.38, 210, and 365 IU/L, respectively. Univariate analysis indicated that NLR >3.38, PLR >210, CA125 ≥365, advanced stage, suboptimal disease, serous type, and ascites were significant predictive factors for platinum resistance. However, only NLR >3.38 and advanced stage were independent predictive factors with an adjusted odds ratio of 1.880 and 3.333, respectively. Regarding factors associated with poor survival outcomes, only PLR >210 and advanced stage were independent factors, with a hazard ratio of 1.578 and 3.994, respectively.

Conclusion: High NLR and advanced stage were potential independent predictive factors for platinum resistance, whereas high PLR and advanced stage were potential independent predictive factors for poor survival outcomes.

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Surgical Management of Early-stage Cervical Cancer: Survey of Practice Among Thai Gynecologic Oncologists

Thiangtham K, Sermsukcharoenchai N, Rittiluechai K, Chanpanitkitchot S, Hanprasertpong J, **Charoenkwan K**.

Objective: To acquire a comprehensive picture of the current surgical management of early-stage cervical cancer by conducting an on-line digital survey among practicing Thai gynecologic oncologists.

Materials and Methods: Thai gynecologic oncologists who had been practicing in the field for at least one year were invited to complete an on-line self-administered questionnaire. This study represents a part of the main study that addressed early-stage cervical cancer management.

Results: One hundred seventy gynecologic oncologists responded to the survey questionnaires. Approximately half of the respondents would abort the radical hysterectomy procedure if preoperative imaging reveals node enlargement suspected of cancer metastasis. If pelvic/para-aortic lymph node metastasis was found during operation, more respondents would abandon the procedure especially for the finding of pelvic node metastasis (65.3%). Thirty-nine respondents (22.9%) reported that they perform laparoscopic surgery for early-stage cervical cancer. This number had dropped significantly after 2018. Criteria used by the respondents for consideration of ovarian preservation at the time of radical hysterectomy varied. Approximately half of the respondents indicated that the combination of criterion including large tumor size, deep stromal invasion, and lymph-vascular space invasion must be met for any patients to be considered as having intermediate-risk for recurrence.

Conclusion: There are large disparity in the current management of early-stage cervical cancer among practicing Thai gynecologic oncologists.

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Interventions for Reducing Pain During Needle Electromyography (EMG) Examination

Pattanakuhar S, **Charoenkwan K**, Witwattanadittakul N, Kwanchuay P, Hathaiareerug C.

Objectives: This is a protocol for a Cochrane Review (intervention). The objectives are as follows: To assess the efficacy and safety of interventions for reducing pain during needle electromyography (EMG) in adults and children.

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DOI: 10.1002/14651858.CD013753

Management of Locally Advanced Cervical Cancer: Survey of Practice Among Thai Gynecologic Oncologists

Rittiluechai K, Sermsukcharoenchai N, Thiangtham K, Chanpanitkitchot S, Hanprasertpong J, **Charoenkwan K**.

Objective: To assess current practice for the management of locally advanced cervical cancer (LACC) in Thailand.

Material and Methods: Thai gynecologic oncologists who had been practicing in the field for at least one year were invited to complete an on-line self-administered questionnaire. The survey encompassed general aspect and organ-specific aspect of care including management of cervical cancer, endometrial cancer, and ovarian cancer. This study represents a part of the main study that addressed LACC management.

Results: One hundred seventy gynecologic oncologists responded to the survey. Seventy-eight percent of the respondents treated the patients with bulky early-stage IB3 and IIA2 by concurrent chemoradiation, followed by neoadjuvant chemotherapy followed by radical surgery (22.4%), and surgery alone (11.8%). Almost all of respondents preferred to use concurrent cisplatin-based chemoradiation for the patients with locally advanced stage IIB to IVA. Only 1.8% of them would consider other treatment modalities. The more effective treatment modalities have been identified in order to improve outcome and reduce toxicity of standard treatment. Large disparity was observed about controversial treatment issues, including ovarian transposition, neoadjuvant chemotherapy followed by surgery, surgical staging for lymph nodes assessment, adjuvant chemotherapy after concurrent chemoradiation, and adjuvant hysterectomy.

Conclusion: Most Thai gynecologic oncologists have been treating patients with LACC by mostly following standard guideline. However, there are variations in practice pattern in some controversial issues.

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Health Education Interventions to Promote Early Presentation and Referral for Women with Symptoms of Endometrial Cancer

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

Background: Diagnosis of endometrial (womb) cancer is normally made at an early stage, as most women with the disease experience abnormal vaginal bleeding, which prompts them to seek medical advice. However, delays in presentation and referral can result in delay in diagnosis and management, which can lead to unfavourable treatment outcomes. This is particularly a problem for pre- and peri-menopausal women. Providing educational information to women and healthcare providers regarding symptoms relating to endometrial cancer may raise awareness of the disease and reduce delayed treatment.

Objectives: To assess the effectiveness of health education interventions targeting healthcare providers, or individuals, or both, to promote early presentation and referral for women with endometrial cancer symptoms. Search methods: We searched CENTRAL, MEDLINE and Embase. We also searched registers of clinical trials, abstracts of scientific meetings and reference lists of review articles.

Selection criteria: We planned to include randomised controlled trials (RCTs), both individually randomised and cluster-RCTs. In the absence of RCTs we planned to include well-designed non-randomised studies (NRS) with a parallel comparison assessing the benefits of any type of health education interventions.

Data collection and analysis: Two review authors independently evaluated whether potentially relevant studies met the inclusion criteria for the review, but none were found.

Main results: A comprehensive search of the literature yielded the following results: CENTRAL (1022 references), MEDLINE (2874 references), and Embase (2820 references). After de-duplication, we screened titles and abstracts of 4880 references and excluded 4864 that did not meet the review inclusion criteria. Of the 16 references that potentially met the review inclusion, we excluded all 16 reports after reviewing the full texts. We did not identify any ongoing trials.

Authors' conclusions: There is currently an absence of evidence to indicate the effectiveness of health education interventions involving healthcare providers or individuals or both to promote early presentation and referral for women with endometrial cancer symptoms. High-quality RCTs are needed to assess whether health education interventions enhance early presentation and referral. If health education interventions can be shown to reduce treatment delays in endometrial cancer, further studies would be required to determine which interventions are most effective.

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DOI: 10.1002/14651858.CD013253.pub2

Effect of Simethicone on Reducing Operative Difficulty Associated With Bowel Interference During Minilaparotomy for Modified Pomeroy Salpingectomy: a Randomized Controlled Trial

Phirom K, **Charoenkwan K**.

Objective: To examine the effect of simethicone on reducing operative difficulty associated with bowel interference during minilaparotomy for postpartum modified Pomeroy partial salpingectomy.

Study design: We enrolled 20–45-year-old women planning the procedure from March 2018 to February 2019. We randomized participants to chew simethicone 160 mg with water 50 mL 2–8 h before surgery or no treatment. The participants were not blinded; however, surgeons, care providers, and outcome assessors were blinded to the study allocation. We measured surgeon-rated operative difficulty using a 10-cm visual analog scale that represented the difficulty perceived to be resulting from bowel interference. Secondary outcomes included operative time and intraoperative and postoperative complications.

Results: We enrolled 60 women in each group; baseline characteristics and procedural profiles were comparable. Women in the intervention group used simethicone a median of 157 min (interquartile range 127–192) before the procedure. Surgeons rated the procedure difficulty score as 4.8 in the simethicone group and 4.5 in the control group ($p = 0.57$). Operative time in the two groups were 26 and 24 min, respectively ($p = 0.14$). We found no difference in intraoperative adverse events including blood loss and mesosalpinx tear, postoperative morbidities, hospital stay, and patient-rated satisfaction scores.

Conclusion: Preprocedural simethicone has no demonstrable benefit in reducing operative difficulty caused by bowel interference during minilaparotomy for postpartum tubal sterilization.

Implications: Preprocedural simethicone as given in this study did not result in reduced bowel interference and improved procedure difficulty. Further research examining simethicone in this setting would not be worthwhile as clinically meaningful benefit is unlikely.

Published in: Contraception. 2020;101(3):178-182.

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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.Impact statementWhat is already known on this subject? Elastic abdominal binder is commonly used after laparotomy to support incision. There was evidence to support the benefit of abdominal binder in reducing psychological distress during the first five days following laparotomy for other indications. From limited number of studies addressing caesarean section, the evidence for the benefits of the binder on pain, symptom distress, and change in haemoglobin level is conflicting. What do the results of this study add? In contrast to the results of the previous study, the beneficial effects of abdominal binder on pain reduction, functional recovery, and quality of life following caesarean delivery could not be demonstrated in this study. What are the implications of these findings for clinical practice and/or further research? The use of elastic abdominal binder after caesarean delivery is not associated with reduction of postoperative pain, faster functional recovery, and improved quality of life in our population. Further studies in other population with different characteristics may be worthwhile.

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Effectiveness of Therapeutic Interventions for Women with Urinary Incontinence: A Systematic Review

Nipa SI, Sriboonreung T, Paungmali A, **Phongnarisorn C**.

Background: Urinary incontinence is a common condition that reduces the quality of life of women specifically. To reduce this problem, it is necessary to identify the best possible therapeutic options.

Purpose: To synthesize the evidence on effective therapeutic options for women with urinary incontinence.

Data Sources: We extracted relevant papers from the Hinari, PubMed, Cochrane, Science Direct, Embase, PEDro, and Cinahl databases. Several studies were searched comprehensively.

Study Selection: We integrated data from 17 randomized controlled trials related to therapeutic interventions for the management of urinary incontinence in women. Data

Extraction: The PEDro scale was used to grade the level of evidence. The contents and outcomes of different therapeutic interventions for various types of urinary incontinence were explored.

Data Synthesis: The comparative effectiveness of the interventions was analyzed based on intervention and control groups, long-term follow-up, adequate sample size, and intention to treat analyses. The primary outcomes of the studies considered reduced severity of urinary incontinence and secondary outcomes such as satisfaction, improved self-esteem, sexual function, and quality of life.

Conclusions: Our findings suggest that pelvic-floor muscle exercise, behavioral training, electrical stimulation, vaginal cones, whole-body vibration treatment, and modified Pilates are significantly effective at reducing urinary incontinence. Nevertheless, persisting with one of these intervention procedures is difficult. Therefore, we recommend further study for long-term follow-up.

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DOI: 10.1615/CritRevPhysRehabilMed.2020031380

Machine Learning in Prediction of Second Primary Cancer and Recurrence in Colorectal Cancer

Ting W-C, Lu Y-CA, Ho W-C, **Cheewakriangkrai C**, Chang H-R, Lin C-L.

Background: Colorectal cancer (CRC) is the third commonly diagnosed cancer worldwide. Recurrence of CRC (Re) and onset of a second primary malignancy (SPM) are important indicators in treating CRC, but it is often difficult to predict the onset of a SPM. Therefore, we used mechanical learning to identify risk factors that affect Re and SPM.

Patient and Methods: CRC patients with cancer registry database at three medical centers were identified. All patients were classified based on Re or no recurrence (NRe) as well as SPM or no SPM (NSPM). Two classifiers, namely A Library for Support Vector Machines (LIBSVM) and Reduced Error Pruning Tree (REPTree), were applied to analyze the relationship between clinical features and Re and/or SPM category by constructing optimized models.

Results: When Re and SPM were evaluated separately, the accuracy of LIBSVM was 0.878 and that of REPTree was 0.622. When Re and SPM were evaluated in combination, the precision of models for SPM+Re, NSPM+Re, SPM+NRe, and NSPM+NRe was 0.878, 0.662, 0.774, and 0.778, respectively.

Conclusions: Machine learning can be used to rank factors affecting tumor Re and SPM. In clinical practice, routine checkups are necessary to ensure early detection of new tumors. The success of prediction and early detection may be enhanced in the future by applying “big data” analysis methods such as machine learning.

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DOI: 10.7150/ijms.37134

Chemotherapy for Endometrial Cancer: Survey of Practice Among Thai Gynecologic Oncologists

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Objective: To assess practice of the Thai gynecologic oncologists on the use of chemotherapy for endometrial cancer (EMC).

Materials and Methods: The present study was a part of the Thai Gynecologic Cancer Society survey which collected data of practice on gynecologic cancer of the Thai gynecologic oncologists who were currently working in the country for at least one year. The web-based questionnaire was open for a response from August to October, 2019. This study retrieved data of chemotherapy for EMC regarding the type or regimen of chemotherapy, settings when chemotherapy was used of either first-, second-, third- or further-line, and also the setting when non-chemotherapy palliative treatment was used.

Results: Out of 258 gynecologic oncologists who met inclusion criteria, 169 responded to the questionnaire regarding chemotherapy use for EMC (65.5%). The duration of practice ranged from 1 to 42 years (median 5 years). More than 80% worked in government hospitals and tertiary-level hospitals. Paclitaxel/carboplatin (97.6%) was the most common first-line regimen whereas doxorubicin/ cisplatin (75.2%) was most commonly used as a second-line chemotherapy regimen. Single-agent was more commonly used as third- or further-line drugs than combination regimens. Among the single agent, liposomal doxorubicin was the most common agent. Hormonal treatment was selected by 12.9% of the respondents as the third- or further-line treatment. Of note, 51.4% of respondents selected palliative treatment after failure from second-line chemotherapy especially when doxorubicin/cisplatin was used as the first-line drug.

Conclusion: Thai gynecologic oncologists used paclitaxel/carboplatin and doxorubicin/cisplatin regimens as the most common first- and second-line chemotherapy for EMC patients, respectively. Single-agent was commonly selected as third- or further-line of chemotherapy, with liposomal doxorubicin as the most common drug.

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Early-stage Ovarian Malignancy Score Versus Risk of Malignancy Indices: Accuracy and Clinical Utility for Preoperative Diagnosis of Women with Adnexal Masses

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Background and objectives: To compare the diagnostic accuracy and clinical utility of the Early-stage Ovarian Malignancy (EOM) score with the Risk of Malignancy Index (RMI) in the presurgical assessment of women presenting with adnexal masses.

Materials and Methods: A secondary analysis was carried out in a retrospective cohort of women who presented with an adnexal mass and were scheduled for surgery at Phrapokklao Hospital between September 2013 and December 2017. The clinical characteristics, ultrasonographic features of the masses, and preoperative CA-125 levels were recorded. The EOM and the RMI score were calculated and compared in terms of accuracy and clinical utility. Decision curve analysis (DCA), which examined the net benefit (NB) of applying the EOM and the RMI in practice at a range of threshold probabilities, was presented.

Results: In this study, data from 270 patients were analyzed. Fifty-four (20.0%) women in the sample had early-stage ovarian cancer. All four RMI versions demonstrated a lower sensitivity for the detection of patients with early-stage ovarian cancer compared to an EOM score ≥ 15. An EOM ≥ 15 resulted in a higher proportion of net true positive or NB than all versions of the RMIs from a threshold probability of 5% to 30%.

Conclusions: It also showed a higher capability to reduce the number of inappropriate referrals than the RMIs at a threshold probability between 5% and 30%. The EOM score showed higher diagnostic sensitivity and has the potential to be clinically more useful than the RMIs to triage women who present with adnexal masses for referral to oncologic gynecologists. Further external validation is required to support our findings.

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