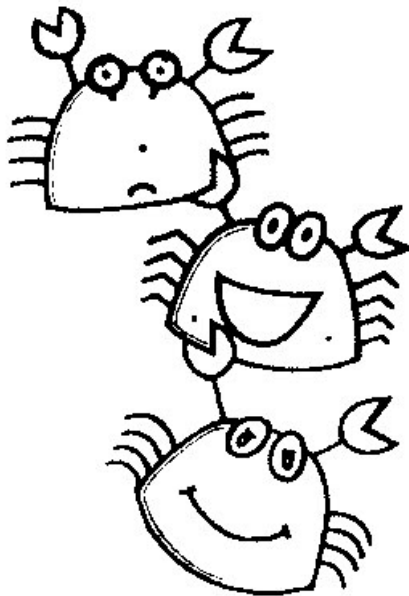


ANNUAL REPORT
ON
GYNECOLOGIC ONCOLOGY
2024



DIVISION OF GYNECOLOGIC ONCOLOGY
DEPARTMENT OF OBSTETRICS AND GYNECOLOGY
FACULTY OF MEDICINE, CHIANG MAI UNIVERSITY
CHIANG MAI, THAILAND

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คุณสุณิสา ภูจิยา

PREFACE

This updated 2024 version of the Gynecologic Oncology Annual Report summarizes our activities over the year. We managed 280 women diagnosed with gynecologic malignancies. Approximately half of these patients had uterine cancer and ovarian cancer while cervical cancer contributed almost equally to 36.79 % 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. Sopida Fanchomphu and Mr. Tanarat Muangmool for their excellent work on gathering data for and editing this publication. Also, I am thankful to 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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CONTENT

Page

SECTION I

➤ Gynecologic Oncology Registry, Chiang Mai University: 2024	2
➤ Gynecologic Oncology Multiple Primary Cancer	5
➤ Operations and Procedures in Gynecologic Oncology	7
➤ Organ Specific Gynecologic Cancer	
Cancer of the Cervix	12
Cancer of the Ovary	18
Cancer of the Uterine Corpus	24
Cancer of the Vulva	31
Cancer of the Vagina	34
Cancer of the Fallopian Tube	36
Cancer of the Peritoneum	39
Gestational Trophoblastic Disease	41

SECTION II

➤ Medical Personnel and Facilities	44
➤ Diagnostic Procedure & Gynecologic Oncology Operations	45
➤ Publications & Presentations	46

SECTION I

➤ **Gynecologic Oncology Registry Chiang Mai University: 2024**

➤ **Operations and Procedures in Gynecologic Oncology**

➤ **Organ Specific Gynecologic Cancer**

- Cancer of the Cervix
- Cancer of the Ovary
- Cancer of the Uterine Corpus
- Cancer of the Vulva
- Cancer of the Vagina
- Cancer of the Fallopian Tube
- Cancer of the Peritoneum
- Gestational Trophoblastic Disease
- Cancer of Other Gynecologic Organs

TABLE 1: Gynecologic Oncology Registry: Chiang Mai University 1997-2024

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 1997-2021 (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 1997-2021 (continued)

Site	2017 Number (%)	2018 Number (%)	2019 Number (%)	2020 Number (%)	2021 Number (%)	2022 Number (%)	2023 Number (%)	2024 Number (%)
Cervix	256 (51.2)	213 (51.9)	224 (51.3)	228 (54.5)	119 (44.2)	128 (42.8)	120 (44.0)	103 (36.8)
Ovary	90 (18.0)	71 (17.3)	66 (15.1)	67 (16.0)	49 (18.2)	44 (14.7)	39 (14.3)	57 (20.4)
Corpus	102 (20.4)	88 (21.4)	112 (25.6)	81 (19.4)	74 (27.5)	90 (30.1)	79 (28.9)	84 (30.0)
Vulva	20 (4.0)	19 (4.6)	13 (3.0)	15 (3.6)	4 (1.5)	10 (3.3)	16 (5.9)	9 (3.2)
Vagina	5 (1.0)	1 (0.2)	3 (0.7)	5 (1.2)	3 (1.1)	5 (1.7)	2 (0.7)	6 (2.1)
FT	9 (1.8)	14 (3.4)	9 (2.1)	11 (2.6)	11 (4.1)	8 (2.7)	9 (3.3)	15 (5.4)
PPA	2 (0.4)	2 (0.5)	1 (0.2)	2 (0.5)	4 (1.5)	8 (2.7)	5 (1.8)	2 (0.7)
GTT	16 (3.2)	2 (0.5)	7 (1.6)	9 (2.2)	5 (1.9)	5 (1.7)	3 (1.1)	2 (0.7)
Others	-	1 (0.2)	2 (0.4)	-	-	1 (0.3)	-	2 (0.7)
Total	500 (100)	411 (100)	437 (100)	418 (100)	269 (100)	299 (100)	273 (100)	280 (100)

PPA = Primary peritoneal adenocarcinoma FT = Fallopian tube GTT = Gestational trophoblastic tumors other = Two primary (Ovary & Corpus, Tube & Cx)

Gynecologic Oncology Multiple Primary Cancers: Chiang Mai University 2002-2024

[illegible]

Gynecologic Oncology Multiple Primary Cancers: Chiang Mai University 2002-2023

[illegible]

Gynecologic Oncology Multiple Primary Cancers: Chiang Mai University 2002-2024

Multiple primary cancers	2023 Number	2024 Number
Ovarian and cervical cancer	-	-
Ovarian and corpus cancer	-	1
Corpus and cervical cancer	-	-
Corpus and fallopian tube cancer	-	-
Corpus and peritoneal cancer	-	-
Corpus and choriocarcinoma	-	-
Cervical and fallopian tube cancer	-	1
Ovarian and fallopian tube	-	-
Ovarian and fallopian tube and corpus cancer	-	-
Cervical and vulva cancer	-	-
Corpus and colon cancer	-	-
Corpus and bladder cancer	-	-
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	2021 Number	2022 Number	2023 Number	2024 Number
Surgery for ovarian & tubal cancer	90	88	69	88	58	55	47	65
Surgery for corpus cancer	98	87	87	87	68	84	75	80
Surgery for vulvar & vagina cancer	17	22	22	22	3	9	17	8
Radical hysterectomy*	74	56	56	56	25	19	22	15
Modified radical hysterectomy*	4	4	4	4	1	2	-	-
Abandoned hysterectomy*	-	-	-	-	1	1	1	-
Radical parametrectomy*	2	-	-	-	-	-	-	-
Radical Trachelectomy	-	-	-	-	-	2	2	-
Trachelectomy	-	-	-	-	-	-	1	-
Laparoscopic radical hysterectomy*	3	3	3	3	1	-	-	1
NOTES assisted vaginal hysterectomy	2	2	2	2	-	-	-	-
NOTES assisted extrafascial hysterectomy	1	-	-	-	-	-	-	-
Laparoscopic radical parametrectomy*	-	-	-	-	-	-	-	-
Total laparoscopic hysterectomy	1	2	2	2	5	3	3	4
CKC	-	-	-	-	-	-	1	-
LEEP	116	89	115	87	60	75	94	104
Colposcopy	537	463	470	627	389	654	615	740

LEEP = Loop electrosurgical excision procedure

NOTES = Natural orifice transluminal endoscopic surgery

* with pelvic lymphadenectomy

CKC = Cold knife conization

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	2	1.9
31-40	22	21.4
41-50	18	17.5
51-60	31	30.1
61-70	19	18.4
71-80	7	6.8
> 81	4	3.9
Total	103	100

Minimum age 29 years, Maximum age 87 years

Mean age 53.5 ± 13.2 years

TABLE 3: Cancer of the Cervix: Parity Distribution

Parity	Number	Percent
0	26	25.2
1	24	23.3
2	34	33.0
3	10	9.7
4	3	2.9
5	1	1.0
6	1	1.0
unknow	4	3.9
Total	103	100

TABLE 4: Cancer of the Cervix: Stage Distribution

Stage	Number	Percent
I	19	18.4
II	33	32.0
III	28	27.2
IV	10	9.7
HSIL	10	9.7
Not stage	3	2.9
Total	103	100

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

	<i>Stage</i>	Number	Percent
I	IA1	5	4.9
	IA2	1	1.0
	IB1	3	2.9
	IB2	6	5.8
	IB3	4	3.9
II	IIA1	3	2.9
	IIA2	1	1.0
	IIB	29	28.2
III	IIIB	9	8.7
	IIIC1	13	12.6
	IIIC2	6	5.8
IV	IVA	5	4.9
	IVB	5	4.9
	HSIL	10	9.7
	Not stage	3	2.9
Total		103	100

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 (%)
IA1	5(5.1)	-	-	5(4.9)
IA2	1(1.0)	-	-	1(1.0)
IB1	3(3.1)	-	-	3(2.9)
IB2	6(6.1)	-	-	6(5.8)
IB3	4(4.1)	-	-	4(3.9)
IIA1	3(3.1)	-	-	3(2.9)
IIA2	1(1.0)	-	-	1(1.0)
IIB	28(28.6)	-	1(50.0)	29(28.2)
IIIB	8(8.2)	1(50.0)	-	9(8.7)
IIIC1	12(12.2)	1(50.0)	-	13(12.6)
IIIC2	5(5.1)	-	1(50.0)	6(5.8)
IVA	5(5.1)	-	-	5(4.9)
IVB	5(5.1)	-	-	5(4.9)
HSIL	10(10.2)	-	-	10(9.7)
Not stage	2(2.0)	-	10	3(2.9)
Total	98(100)	2(100)	3(100)	103(100)

HIV = Human immunodeficiency virus

HSIL = High-grade squamous intraepithelial lesion

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

Histological Type	Number	Percent
Squamous cell carcinoma	74	71.8
Well differentiated	3	2.9
Moderately differentiated	41	39.8
Poorly differentiated	17	16.5
No defined differentiation	13	12.6
Adenocarcinoma	14	13.6
NE	1	1.0
Small cell NE	1	1.0
HSIL	10	9.7
tubular adenoma	1	1.0
unknow	2	1.9
Total	103	100

NE = Neuroendocrine

CA = Carcinoma

HSIL = High-grade squamous intraepithelial lesion

TABLE 8: Treatment of Cancer of the Cervix

Treatment	Number	Percent
Surgery alone		
TAH	6	5.8
RHPL	6	5.8
Lap radical hysterectomy	1	1.0
Lap.hysterectomy	4	3.9
Chemotherapy alone	2	1.9
CCRT	53	51.5
RT alone	7	6.8
Brachytherapy	5	4.9
Combined treatment		
Lap Radical hysterectomy with RT	1	1.0
Radical hysterectomy with CCRT	6	5.8
Radical hysterectomy with RT	4	3.9
TAH + brachytherapy	1	1.0
TAH +CMT	1	1.0
TAH+WPRT	2	1.9
Sub total hysterectomy+CCRT	1	1.0
Others		
Follow up with progress disease	1	1.0
Loss FU	1	1.0
FU	1	1.0
Total	103	100

TAH = Total abdominal hysterectomy

RHPL = Radical hysterectomy with bilateral pelvic
lymphadenectomy

RT = Radiation therapy

CCRT = Concurrent chemoradiation

CMT = 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	5.3
21-30	1	1.8
31-40	8	14.0
41-50	11	19.3
51-60	15	26.3
61-70	14	24.6
71-80	5	8.8
Total	57	100

Minimum age 12 years, Maximum age 76 years
Mean age 52.0 ± 15.4 years

TABLE 10: Cancer of the Ovary: Parity Distribution

Parity	Number	Percent
0	25	43.9
1	14	24.6
2	10	17.5
3	5	8.8
8	1	1.8
unknow	2	3.5
Total	57	100

TABLE 11: Cancer of the Ovary: Histological Distribution

Histology	Number	Percent
Epithelium	49	86.0
Germ cell	3	5.3
Sex cord	3	5.3
Papillary thyroid CA arising in mature teratoma	1	1.8
leiomyosarcoma	1	1.8
Total	57	100

TABLE 12: Epithelial Ovarian Cancer: Histological Subtype Distribution

Histological Subtype	Number	Percent
Serous adeno CA	11	21.6
Serous LMP	1	2.0
Clear cell CA	11	21.6
Endometrioid CA	2	3.9
Mucinous LMP	7	13.7
Mucinous adeno CA	5	9.8
Adeno CA	5	9.8
Mixed clear cell+Endometrioid adeno CA	3	5.9
Mixed serous+mucinous CA	1	2.0
Mixed Endometrioid adeno Ca+Large cell NE	1	2.0
leiomyosarcoma	1	2.0
Papillary thyroid CA arising in mature teratoma	1	2.0
unknow	2	3.9
Total	51	100

CA = Carcinoma

LMP = Low malignant potential

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

Histological Subtype	Number	Percent
Immature teratoma	2	66.7
Dysgerminoma	1	33.3
Total	3	100

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

Subtype	Number	Percent
Adult granulosa cell	2	66.7
sertoli leydig	1	33.3
Total	3	100

TABLE 15: Epithelial Ovarian Cancer: Stage Distribution

Stage	Number	Percent
IA	10	17.5
IC	3	5.3
IC1	4	7.0
IC2	6	10.5
IC3	4	7.0
IIA	1	1.8
IIB	4	7.0
IIIA1	1	1.8
IIIA2	1	1.8
IIIB	2	3.5
IIIC	4	7.0
IV	1	1.8
IVA	1	1.8
IVB	1	1.8
Advanced stage	3	5.3
Not staged	11	19.3
Total	57	100

TABLE 16: Germ Cell Ovarian Cancer: Stage Distribution

Stage	Number	Percent
IA	1	33.3
IC	1	33.3
IC2	1	33.3
Total	3	100

TABLE 17: Sex cord-stromal tumor: Stage

Stage	Number	Percent
IA	1	33.3
IC	1	33.3
IIIA2	1	33.3
Total	3	100

TABLE 16: Ovarian Cancer: Stage and Histology Distribution

Stage	Epithelial	Percent	Germ cell	Percent	Sex cord	Percent
IA	10	17.5	1	33.3	1	33.3
IC	3	5.3	1	33.3	1	33.3
IC1	4	7.0	-	-	-	-
IC2	6	10.5	1	33.3	-	-
IC3	4	7.0	-	-	-	-
IIA	1	1.8	-	-	-	-
IIB	4	7.0	-	-	-	-
IIIA1	1	1.8	-	-	-	-
IIIA2	1	1.8	-	-	1	33.3
IIIB	2	3.5	-	-	-	-
IIIC	4	7.0	-	-	-	-
IV	1	1.8	-	-	-	-
IVA	1	1.8	-	-	-	-
IVB	1	1.8	-	-	-	-
Advanced stage	3	5.3	-	-	-	-
Not staged	11	19.3	-	-	-	-
Total	57	100	3	100	3	100

TABLE 17: Cancer of the Ovary: Primary Treatment and Adjuvant Chemotherapy

Treatment	Number	Percent
Complete SSP with adjuvant chemotherapy	12	21.1
Complete SSP without adjuvant chemotherapy	5	8.8
Incomplete SSP with adjuvant chemotherapy	18	31.6
Incomplete SSP without adjuvant chemotherapy	9	15.8
Incomplete SSP with loss FU	1	1.8
NAC+plan Sx	9	15.8
Palliative care	1	1.8
Loss FU	2	3.5
Total	57	100

SSP = Surgical staging procedure

NAC = Neoadjuvant chemotherapy

TABLE 18: Ovarian Cancer: Outcome of Treatment

Outcome	Number	Percent
Under follow-up without disease	24	42.1
Under follow-up with disease	2	3.5
During treatment	20	35.1
During treatment with progress/persist of disease	3	5.3
Loss to follow-up	4	7.0
Under FU with partial response	1	1.8
Palliative care	2	3.5
Refer to provincial hospital for treatment	1	1.8
Total	57	100

Cancer of the Uterine Corpus

➤ **Distribution by**

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

TABLE 19: Cancer of the Corpus: Age Distribution

Age	Number	Percent
≤40	4	4.8
41-50	12	14.3
51-60	19	22.6
61-70	35	41.7
71-80	14	16.7
Total	84	100

Minimum age 28 years, Maximum age 80 years
Mean age 60.4 ± 11.3 years

TABLE 20: Cancer of the Corpus: Distribution by Menopausal Status

Menopausal Status	Number	Percent
Yes	18	21.4
No	66	78.6
Total	84	100

TABLE 21: Cancer of the Uterine Corpus: Distribution by Underlying Diseases

Medical disease	Number	Percent
None	29	34.5
HT	14	16.7
HT+DM	9	10.7
HT+DLP	7	8.3
HT+DM+DLP	4	4.8
HT+ DLP+GOUT+CKD+CA breast	1	1.2
HT+COPD	1	1.2
Ischemic stroke	2	2.4
HT+CA breast	1	1.2
HT+CA breast +DM	1	1.2
HT+Atrial trachycardia	1	1.2
HT+old CVA	1	1.2
DLP	2	2.4
DLP+CA breast	1	1.2
DLP+DIA	1	1.2
DM+DLP	1	1.2
CA rectum	1	1.2
GOUT	1	1.2
CA breast	1	1.2
hyperthyroid	1	1.2
OSA	1	1.2
rheumatic heart disease	1	1.2
schizophrenia	1	1.2
Thyrotoxicosis	1	1.2
Total	84	100

HT = Hypertension
 CA = Cancer
 CKD = Chronic kidney disease
 DLP = Dyslipidemia
 DM = Diabetes mellitus

TABLE 22: Cancer of the Uterine Corpus: Distribution by Parity

Parity	Number	Percent
0	35	41.7
1	15	17.9
2	23	27.4
3	5	6.0
4	2	2.4
6	1	1.2
unknown	3	3.6
Total	84	100

TABLE 23: Cancer of the Uterine Corpus: Distribution by Surgical Staging

	Stage	Number	Percent
I	I	1	1.2
	IA	4	4.8
	IA1	2	2.4
	IA2	12	14.3
	IA3	1	1.2
	IB	5	6.0
	IB1	1	1.2
	IC	1	1.2
	IC1	1	1.2
II	IIA	2	2.4
	IIB	3	3.6
	IIC	11	13.1
III	IIIA	4	4.8
	IIIA1	4	4.8
	IIIA2	7	8.3
	IIIB	1	1.2
	IIIB2	2	2.4
	IIIC1	5	6.0
	IIIC2	4	4.8
IV	IVB	8	9.5
	IVC	1	1.2
Not staged		4	4.8
Total		84	100

TABLE 24: Cancer of the Uterine Corpus: Histologic Distribution

Histology Type	Number	Percent
Endometrioid adeno CA	52	61.9
Grade I	21	25.0
Grade II	23	27.4
Grade III	8	9.5
High-grade Serous adenoCA	7	8.3
High-grade ESS	3	3.6
Low-grade ESS	1	1.2
Mixed type	9	10.7
Clear cell adenoCA	5	6.0
Leiomyosarcoma	2	2.4
Adenocarcinoma	3	3.6
Carcinosarcoma	2	2.4
Total	84	100

CA = Carcinoma

ESS = Endodermal stromal sarcoma

TABLE 25: Treatment of Corpus Cancer

Treatment	Number	Percent
Complete SSP	11	13.1
Complete SSP +Adj. Chemotherapy	4	4.8
Complete SSP + WPRT + Brachytherapy	1	1.2
Complete SSP + Brachytherapy	2	2.4
Complete SSP + Sequential CMT-RT	27	32.1
Complete SSP+loss FU	5	6.0
Incomplete SSP	5	6.0
Incomplete SSP + Adj.Chemotherapy	6	7.1
Incomplete SSP +sequential CMT-RT	2	2.4
Incomplete SSP +EBRT + Brachytherapy	1	1.2
Incomplete SSP +Brachytherapy	1	1.2
Incomplete SSP +WPRT	1	1.2
Brachytherapy+Referto other hospital	1	1.2
Incomplete SSP +loss FU	7	8.3
Incomplete SSP +Refer to other hospital	1	1.2
NAC+Incomplete sx+Adj.CMT	1	1.2
NAC:PT+CSS+Adj.CMT	1	1.2
CSS+loss FU	6	7.1
NAC:CMT+plan Sx	1	1.2
Total	84	100

Adj = Adjuvant

NAC = Neoadjuvant chemotherapy

CMT = Chemotherapy

SSP = Surgical staging procedure

WPRT = Whole pelvis radiotherapy

EBRT = External beam radiotherapy

CCRT = Concurrent chemoradiation

VBT = Vaginal Brachytherapy

TABLE 26: Outcome of Treatment of Corpus Cancer

Outcome	Number	Percent
Under follow-up without disease	36	42.9
During treatment	24	28.6
During treatment with progression/persistence of disease	3	3.6
During treatment with disease	1	1.2
During treatment with partial response	1	1.2
Refer to other hospital for treatment	2	2.4
Loss to follow-up	17	20.2
Total	84	100

Cancer of the Vulva

➤ Distribution by

- Age
- Stage
- Histology
- Treatment

TABLE 27: Cancer of the Vulva: Age Distribution

Age	Number	Percent
41-50	1	11.1
51-60	1	11.1
61-70	2	22.2
71-80	4	44.4
>80	1	11.1
Total	9	100

Minimum age 46 years, Maximum age 88 years

Mean age 68.1 ± 12.6 years

TABLE 28: Cancer of the Vulva: Stage Distribution

Stage	Number	Percent
Paget disease	3	33.3
HSIL	2	22.2
Basal cell carcinoma	1	11.1
I	1	11.1
II	2	22.2
Total	9	100

TABLE 29: Cancer of the Vulva: Histological Type Distribution

Histological Type distribution	Number	Percent
Squamous cell carcinoma	3	33.3
Paget disease	3	33.3
HSIL	2	22.2
Basal cell carcinoma	1	11.1
Total	9	100

TABLE 30: Treatment of Cancer of the Vulva

Treatment	Number	Percent
BGND+Adj.CMT	1	11.1
NAC:CMT+BGND	1	11.1
Radical vulvectomy	2	22.2
WLE	4	44.4
Excision	1	11.1
Total	9	100

RT = Radiation

BGND = Bilateral groin node dissection

Cancer of the Vagina

➤ Distribution by

- Age
- Stage
- Histology
- Treatment

TABLE 31: Cancer of the Vagina

No	Age	Stage	Histology	Treatment	Outcome
1	44	III	malignant melanoma	CCRT	Loss FU
2	51	III	Adeno CA	CCRT	During treatment
3	59	IVB	SCCA	CMT	Regress of disease
4	68	-	HSIL	Brachytherapy	Loss FU
5	77	III	Malignant melanoma	Radical RT	Loss FU
6**	82	IVA	Clear cell CA	palliative RT	Loss FU

** CA vagina with CA urethra

CCRT = Concurrent chemoradiation

SCCA = Squamous cell carcinoma

Cancer of the Fallopian Tube

TABLE 32: Cancer of the Fallopian Tube 2024

Data	Case 1	Case 2	Case 3
Age	49	53	56
Marital status	Married	Married	married
Parity	0000	0000	2002
Presenting symptoms	Pelvic mass	Pelvic mass	Ascites
Stage	-	IIB	IIIC
Histology	High grade serous adenoCA	High grade serous adenoCA	High grade serous adenoCA
Treatment	TLH with BSO→Adj.PT	TAH with BSO with partial omentectomy with ascites collection with lysis adhesion→Adj.PT+BEV	NAC :PT →TAH with BSO with omentectomy with debulking tumor →Adj.PT+BEV
Outcome	During treatment	During treatment	During treatment

Data	Case 4	Case 5	Case 6
Age	57	57	59
Marital status	Married	Married	Married
Parity	2001	1-0-0-1	3-0-0-3
Presenting symptoms	Pelvic mass	Pelvic mass	pelvicmas
Stage	IVB	IIIB	IIIC
Histology	High grade serous adeno CA	High grade serous adeno CA	High grade serous adeno CA
Treatment	NAC:PT→TAH with BSO with BPNS with partial omenectomy with debulking tumor→ adjuvant PT	TAH with BSO with BPND with partial omenectomy with peritoneal washing with appendectomy→Adj.PT	TAH with BSO with BPND with partial omenectomy with appendectomy→Adj.PT+BEV
Outcome	Fallow up with progress of disease	Complete response→ Fallow up without disease	During treatment

Data	Case 7	Case 8	Case 9
Age	60	62	66
Marital status	Married	Single	Married
Parity	3-0-0-3	0-0-0-0	1-0-0-1
Presenting symptoms	Ascites	Pelvic mass	Ascites
Stage	IIIC	IVB	IV
Histology	High grade serous adenoCA	High grade serous adenoCA	High grade serous adenoCA
Treatment	NAC:PT→TAH with BSO →Adj.PT+BEV	TAH with BSO with partial omentectomy with appendectomy with ascites collection→Adjuvant PT+BEV	NAC:PT→TAH with BSO with omentectomy → refer to other unit for treatment

Outcome	During treatment with progress of disease	During Rx	FU other Unit
Data	Case 10	Case 11	Case 12
Age	66	67	67
Marital status	Married	unknow	Married
Parity	2-0-0-2	unknow	2-0-0-2
Presenting symptoms	Abdominal distention	Ascites	Dyspepsia
Stage	IIIC	IIIC	IIIC
Histology	High grade serous adenoCA	High grade serous adenoCA	High grade serous adenoCA
Treatment	NAC:PT→Rt.SO with partial omentectomy with lysis adhesion→Adj.PT	NAC:PT→TAH with BSO with omentectomy with debulking tumor→Adjuvant PT+BEV	TAH with BSO with omental bx with ascites collection→Adjuvant PT+BEV
Outcome	During treatment	During treatment	During treatment

Data	Case 13	Case 14	Case 15
Age	72	73	88
Marital status	Married	Married	Married
Parity	2-0-0-2	3-0-0-3	1-0-1-1
Presenting symptoms	Abdominal distention	Pelvic pain	Pelvic mass
Stage	IIIC	IIIA2	IVB
Histology	High grade serous adenoCA	High grade serous adenoCA	High grade serous adenoCA
Treatment	TAH with BSO with partial omentectomy with appendectomy with debulking tumor→Adjuvant PT+BEV	TAH with BSO with BPND with partial omentectomy with appendectomy with peritoneal washing→Adjuvant PT+BEV	TAH with BSO→loss FU
Outcome	FU without disease	During treatment	Loss FU

BEV	=Bevacizumab
BPND	=Bilateral pelvic node dissection
BPNS	=Bilateral pelvic node sampling
BSO	=Bilateral salpingo-oophorectomy
CA	=Carcinoma
Lt	=Left
LN	=Lymnode
NAC	=Neoadjuvant chemotherapy
PAND	=Para-aortic node dissection
PND	=pelvic node dissection
PT	=Paclitaxel and Carboplatin
Rt	=Right
SO	=Salpingo-oophorectomy
TAH	=Total abdominal hysterectomy

Cancer of the Peritoneum

TABLE 33: Cancer of the Peritoneum 2024

Data	Case 1	Case 2
Age	78	61
Marital status	Married	Married
Parity	3-0-0-3	3-0-0-3
Presenting symptoms	Abdominal distension	Abdominal distension
Stage	IIIC	IVB
Histology	High grade serous adeno CA	High grade serous adeno CA
Treatment	NAC:PT→TAH with BSO with partial omentectomy → Adjuvant PT	NAC:PT→ debulking tumor with partial omentectomy → Adjuvant PT+BEV
Outcome	Complete response → FU without disease	During treatment with progress of disease

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

Gestational Trophoblastic Disease

- Gestational Trophoblastic Tumor

TABLE 34: Gestational Trophoblastic Tumors in 2024

No	Age (year)	Initial hCG titer	Prognosis Classification	Diagnosis	FIGO	Treatment	Result
1	30	1000000	Poor prognosis	GTN	I	CMT	Palliative care→loss FU
2	37	7014	Poor prognosis	GTN	I	NAC:MTX+FA→TAH with bilat salpingectomy→Adj.E MA+CO	Loss FU

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

GTN = Gestational trophoblastic tumor

HCG = Human chorionic gonadotropin

MTX = Methotrexate

MTX+FA = Methotrexate + Folinic acid

SECTION II

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

Medical Personnel and Facilities

TABLE 35: Medical Personnel and Facilities
in Division of Gynecologic Oncology, Chiang Mai University

Personnel and Facilities	Number
Medical doctor	10
General nurse	24
Practical nurse	12
Helper	6
Research nurse	1
Research assistant	1
Statistician	1
Inpatient bed	25
One-day chemotherapy bed	18
Outpatient bed	7
Colposcope	3
Cryosurgery set	1
Radiosurgery (Surgitron)	3

Funds (กองทุนของหน่วยงานมะเร็งวิทยาวิเศษ)

1. Gynecologic Cancer Fund (กองทุนมะเร็งทางวิเศษ)
2. Cervical Cancer Surgery Fund (กองทุนผ่าตัดมะเร็งปากมดลูก)

1st Year Fellow

Kamonrat Monthatip, MD
Chayanid Detwongya, MD
Tanadon Salakphet, MD

2nd Year Fellow

Chuthamard arpornphattana, MD
Sopita Prasertpakdi, MD
Nutthanun Rachadech, MD

Radiation Oncologists

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

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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 Suksombooncharoen, M

Diagnostic Procedures and Operations

TABLE 36: Diagnostic Procedures and Operations for Cervical Neoplasia

Procedures & Operations	Number
Colposcopy	615
LEEP	94
Simple hysterectomy	9
Subtotal hysterectomy	1
Radical hysterectomy & PL	11
Laparoscopic hysterectomy	4

LEEP = Loop electrosurgical excision procedure

PL = Pelvic lymphadenectomy

TABLE 37: Operations for Ovarian, Corpus, and Vulvar Cancer

Operations	Number
CRS for ovarian cancer	51
CRS for fallopian tube cancer	15
Surgical staging for corpus cancer	53
Laparoscopic hysterectomy for corpus cancer	30
WLE for vulvar cancer	4
Radical vulvectomy for vulvar cancer	2
BGND for vulvar cancer	2

CRS = Cytoreductive surgery

PL = Pelvic lymphadenectomy

BGND = Bilateral groin node dissection

PUBLICATIONS & PRESENTATIONS

2024

A machine learning-based prediction model of pelvic lymph node metastasis in women with early-stage cervical cancer

Kamonrat Monthatip, Chiraphat Boonnag, Tanarat Muangmool & Kittipat Charoenkwan

Abstract

Objective: To develop a novel machine learning-based preoperative prediction model for pelvic lymph node metastasis (PLNM) in early-stage cervical cancer by combining the clinical findings and preoperative computerized tomography (CT) of the whole abdomen and pelvis.

Methods: Patients diagnosed with International Federation of Gynecology and Obstetrics stage IA2-IIA1 squamous cell carcinoma, adenocarcinoma, and adenosquamous carcinoma of the cervix who had primary radical surgery with bilateral pelvic lymphadenectomy from January 1, 2003 to December 31, 2020, were included. Seven supervised machine learning algorithms, including logistic regression, random forest, support vector machine, adaptive boosting, gradient boosting, extreme gradient boosting, and category boosting, were used to evaluate the risk of PLNM.

Results: PLNM was found in 199 (23.9%) of 832 patients included. Younger age, larger tumor size, higher stage, no prior conization, tumor appearance, adenosquamous histology, and vaginal metastasis as well as the CT findings of larger tumor size, parametrial metastasis, pelvic lymph node enlargement, and vaginal metastasis, were significantly associated with PLNM. The models' predictive performance, including accuracy (89.1%–90.6%), area under the receiver operating characteristics curve (86.9%–91.0%), sensitivity (77.4%–82.4%), specificity (92.1%–94.3%), positive predictive value (77.0%–81.7%), and negative predictive value (93.0%–94.4%), appeared satisfactory and comparable among all the algorithms. After optimizing the model's decision threshold to enhance the sensitivity to at least 95%, the 'highly sensitive' model was obtained with a 2.5%–4.4% false-negative rate of PLNM prediction.

Conclusion: We developed prediction models for PLNM in early-stage cervical cancer with promising prediction performance in our setting. Further external validation in other populations is needed with potential clinical applications.

Alterations in mitochondria isolated from peripheral blood mononuclear cells and tumors of patients with epithelial ovarian cancers

Kittipat Charoenkwan, Nattayaporn Apaijai, Sirawit Sriwichaiin, Nipon Chattipakorn & Siriporn C Chattipakorn

Abstract

Metabolic alterations play an essential role in ovarian carcinogenesis. The flexibility of mitochondrial functions facilitates cellular adaptation to the tough environment associated with carcinogenesis. An understanding of the differences in mitochondrial functions in normal ovaries and cancers could provide a basis for further exploration of future mitochondria-based screening, diagnosis, prognostic prediction, and targeted therapy for epithelial ovarian cancers. The main objective of this study was to assess mitochondrial function profiles measured from PBMCs and ovarian tissues of epithelial ovarian cancers in comparison with normal ovaries. A total of 36 patients were recruited for the study, all of whom underwent primary surgical treatment for malignant epithelial ovarian neoplasm. Of these, 20 patients were in the early stage and 16 patients were in the advanced stage. Additionally, 21 patients who had pelvic surgery for benign gynecologic conditions, with normal ovaries incidentally removed, were recruited as controls. At the time of surgery, a blood sample was collected from each participant for PBMC isolation, and ovarian tissue was retained for molecular studies. These studies included the examination of oxidative stress, mitochondrial mass, mitochondrial respiration, mitochondrial reactive oxygen species (ROS), mitochondrial membrane potential (MMP) changes, and mitochondrial swelling. Clinical and histopathological data were also collected and compared between different stages of epithelial ovarian cancers: early-stage (group 1), advanced-stage (group 2), and normal ovaries (group 3). The levels of cellular oxidative stress, mitochondrial mass, and mitochondrial biogenesis in the peripheral blood mononuclear cells (PBMCs) of participants with ovarian cancer were significantly lower than those of the control group. However, the mitochondrial respiratory parameters measured from the PBMCs were similar across all three groups. Furthermore, mitochondrial membrane depolarization and mitochondrial swelling were observed in ovarian tissues of both early-stage and advanced-stage cancer groups. We demonstrated the dynamic nature of mitochondrial ROS production, biogenesis, and respiratory function in response to epithelial ovarian carcinogenesis. The flexibility of mitochondrial functions under diverse conditions may make it a challenging therapeutic target for ovarian cancer.

Early versus delayed oral feeding after major gynaecologic surgery

Kittipat Charoenkwan, Chalaithorn Nantasupha, Tanarat Muangmool & Elizabeth Matovinovic

Abstract

Background

This is an updated and expanded version of the original Cochrane review, first published in 2014. Postoperative oral intake is traditionally withheld after major abdominal gynaecologic surgery until the return of bowel function. The concern is that early oral intake will result in vomiting and severe paralytic ileus, with subsequent aspiration pneumonia, wound dehiscence, and anastomotic leakage. However, clinical studies suggest that there may be benefits from early postoperative oral intake. Currently, gynaecologic surgery can be performed through various routes: open abdominal, vaginal, laparoscopic, robotic, or a combination. In this version, we included women undergoing major gynaecologic surgery through all of these routes, either alone or in combination.

Objectives

To assess the effects of early versus delayed (traditional) initiation of oral intake of food and fluids after major gynaecologic surgery.

Search methods

On 13 June 2023, we searched the Cochrane Gynaecology and Fertility Group's Specialised Register, CENTRAL, MEDLINE, Embase, the citation lists of relevant publications, and two trial registries. We also contacted experts in the field for any additional studies.

Selection criteria

We included randomised controlled trials (RCTs) that compared the effect of early versus delayed initiation of oral intake of food and fluids after major gynaecologic surgery, performed by abdominal, vaginal, laparoscopic, and robotic approaches. Early feeding was defined as oral intake of fluids or food within 24 hours post-surgery, regardless of the return of bowel function. Delayed feeding was defined as oral intake after 24 hours post-surgery, and only after signs of postoperative ileus resolution. Primary outcomes were: postoperative ileus, nausea, vomiting, cramping, abdominal pain, bloating, abdominal distension, need for postoperative nasogastric tube, time to the presence of bowel sounds, time to the first passage of flatus, time to the first passage of stool, time to the start of a regular diet, and length of postoperative hospital stay. Secondary outcomes were: infectious complications, wound complications, deep venous thrombosis, urinary tract infection, pneumonia, satisfaction, and quality of life.

Data collection and analysis

Two review authors independently selected studies, assessed the risk of bias, and extracted the data. We calculated the risk ratio (RR) with a 95% confidence interval (CI) for dichotomous data. We examined continuous data using the mean difference (MD) and a 95% CI. We tested for heterogeneity between the results of different studies using a forest plot of the meta-analysis, the statistical tests of homogeneity of 2x2 tables, and the IN value. We assessed the certainty of the evidence using GRADE methods.

Main results

We included seven randomised controlled trials (RCTs), randomising 902 women.

We are uncertain whether early feeding compared to delayed feeding has an effect on postoperative ileus (RR 0.49, 95% CI 0.21 to 1.16; $I^2 = 0\%$; 4 studies, 418 women; low-certainty evidence). We are uncertain whether early feeding affects nausea or vomiting, or both (RR 0.94, 95% CI 0.66 to 1.33; $I^2 = 67\%$; random-effects model; 6 studies, 742 women; very low-certainty evidence); nausea (RR 1.24, 95% CI 0.51 to 3.03; $I^2 = 74\%$; 3 studies, 453 women; low-certainty evidence); vomiting (RR 0.83, 95% CI 0.52 to 1.32; $I^2 = 0\%$; 4 studies, 559 women; low-certainty evidence), abdominal distension (RR 0.99, 95% CI 0.75 to 1.31; $I^2 = 0\%$; 4 studies, 559 women; low-certainty evidence); need for postoperative nasogastric tube placement (RR 0.46, 95% CI 0.14 to 1.55; 3 studies, 453 women; low-certainty evidence); or time to the presence of bowel sounds (MD -0.20 days, 95% CI -0.46 to 0.06; $I^2 = 71\%$; random-effects model; 3 studies, 477 women; low-certainty evidence).

There is probably no difference between the two feeding protocols for the onset of flatus (MD -0.11 days, 95% CI -0.23 to 0.02; $I^2 = 9\%$; 5 studies, 702 women; moderate-certainty evidence).

Early feeding probably results in a slight reduction in the time to the first passage of stool (MD -0.18 days, 95% CI -0.33 to -0.04; $I^2 = 0\%$; 4 studies, 507 women; moderate-certainty evidence), and may lead to a slightly sooner resumption of a solid diet (MD -1.10 days, 95% CI -1.79 to -0.41; $I^2 = 97\%$; random-effects model; 3 studies, 420 women; low-certainty evidence). Hospital stay may be slightly shorter in the early feeding group (MD -0.66 days, 95% CI -1.17 to -0.15; $I^2 = 77\%$; random-effects model; 5 studies, 603 women; low-certainty evidence).

The effect of the two feeding protocols on febrile morbidity is uncertain (RR 0.96, 95% CI 0.75 to 1.22; $I^2 = 47\%$; 3 studies, 453 women; low-certainty evidence). However, infectious complications are probably less common in women with early feeding (RR 0.20, 95% CI 0.05 to 0.73; $I^2 = 0\%$; 2 studies, 183 women; moderate-certainty evidence). There may be no difference between the two feeding protocols for wound complications (RR 0.82, 95% CI 0.50 to 1.35; $I^2 = 0\%$; 4 studies, 474 women; low-certainty evidence), or pneumonia (RR 0.35, 95% CI 0.07 to 1.73; $I^2 = 0\%$; 3 studies, 434 women; low-certainty evidence).

Two studies measured participant satisfaction and quality of life. One study found satisfaction was probably higher in the early feeding group, while the other study found no difference. Neither study found a significant difference between the groups for quality of life ($P > 0.05$).

Authors' conclusions

Despite some uncertainty, there is no evidence to indicate harmful effects of early feeding following major gynaecologic surgery, measured as postoperative ileus, nausea, vomiting, or abdominal distension. The potential benefits of early feeding include a slightly faster initiation of bowel movements, a slightly sooner resumption of a solid diet, a slightly shorter hospital stay, a lower rate of infectious complications, and a higher level of satisfaction.

Effects of Postoperative Gum Chewing on Recovery of Gastrointestinal Function Following Laparoscopic Gynecologic Surgery: Systematic Review and Meta-Analysis of Randomized Controlled Trials

Thunwipa Tuscharoenporn, Kittithat Uruwankul & Kittipat Charoenkwan

Abstract

Background: Chewing gum, considered a form of sham feeding, has been shown to improve intestinal motor and secretory function in various types of abdominal surgery. We conducted this systematic review to evaluate the effects of postoperative gum chewing on the recovery of gastrointestinal function after laparoscopic gynecologic surgery. **Methods:** We performed a comprehensive literature review of all randomized controlled trials (RCTs) in PubMed, Embase, and a reference list of relevant studies from the inception to 11 March 2024, comparing postoperative gum chewing versus no gum chewing following laparoscopic gynecologic surgery regardless of indications and setting without language restriction. The primary outcome was the time to the presence of bowel sounds and the time to the first passage of flatus. Cochrane's risk of bias tool was used to assess the risk of bias in included studies. **Results:** Nine RCTs with a total of 1011 patients were included. Overall, three studies were categorized as having a low risk of bias, three had some concerns, and three exhibited a high risk of bias. The time to the presence of bowel sounds (mean difference [MD] -2.66 h, 95% confidence interval [CI] -3.68 to -1.64, $p < 0.00001$) and time to the first passage of flatus (MD -4.20 h, 95% CI -5.79 to -2.61, $p < 0.00001$) was significantly shorter in the gum-chewing group. There was no statistical difference between the two groups with regard to the time to the first defecation (MD -6.52 h, 95% CI -15.70 to 2.66, $p = 0.16$), time to the first postoperative mobilization (MD 24.05 min, 95% CI -38.16 to 86.26, $p = 0.45$), postoperative ileus (MD 0.68, 95% CI 0.39 to 1.19, $p = 0.17$), and length of hospital stay (MD -0.05 day, 95% CI -0.14 to 0.04, $p = 0.28$). **Conclusions:** Gum chewing following laparoscopic gynecologic surgery appears to promote the recovery of gastrointestinal function, as evidenced by a reduced time to the presence of bowel sounds and the first passage of flatus.

Efficacy of Lidocaine Spray for Pain Reduction during Colposcopy-Directed Cervical Biopsies: A Randomized Controlled Trial

Ornwitsanate Mongkolmafai, Dhammapoj Jeerakornpassawat, Charuwan Tantipalakorn, Kittipat Charoenkwan, Prapaporn Suprasert, Jatupol Srisomboon & Theera Tongsong

Abstract

Objectives: The objective of this study was to evaluate the efficacy of lidocaine spray in reducing the pain during colposcopy-directed cervical biopsy (CDB). **Methods:** From December 2017 to February 2019, 312 women undergoing CDBs were enrolled. The participants were randomized to three groups: group 1 (lidocaine spray), in which lidocaine spray was applied thoroughly to the cervix; group 2 (placebo), in which normal saline was applied thoroughly to the cervix; and group 3 (control), in which no anesthetic agent was applied to the cervix. Each woman completed a 10 cm visual analog scale to classify the subjective pain experience at three time points: baseline, immediately after biopsy, and 10 min after the procedure. The primary outcome of this study was the biopsy pain score. **Results:** The 312 enrolled women were randomly assigned to the three groups, amounting to 104 women per group. The clinical and pathological characteristics of the participants in all groups were comparable. The baseline, the biopsy, and the post-procedure pain scores were comparable among the three groups. There was a significant increase in the pain score from baseline to biopsy and from baseline to post-procedure in each group. The pain-score changes from baseline to biopsy in the lidocaine spray group significantly decreased when compared with the normal saline group (<0.001), and tended to decrease, though not significantly ($p = 0.06$), when compared with the control group. No complication with the intervention was observed. **Conclusions:** The application of lidocaine spray to the cervix has the benefit of reducing the pain associated with CDBs by a small amount. However, the intervention is safe and may be considered in nulliparous and/or overly anxious women undergoing the procedure.

Treatment Patterns and Surgical Outcomes of Stage IA1 Cervical Carcinoma

Sethawat Sethasathien, Charuwan Tantipalakorn, Unyavee Apichottiwat, Kittipat Charoenkwan, Prapaporn Suprasert & Jatupol Srisomboon

Abstract

OBJECTIVE The primary objective was to determine the 5-year overall survival rate and 5-year disease-free survival rate of patients with CACx 1A1 treated at Chiang Mai University Hospital and the secondary objective was to describe treatment modalities as well as their associated complications.

METHODS Patients with stage IA1 cervical cancer diagnosed from January 2001 to June 2018 at Chiang Mai University Hospital were retrospectively reviewed. Inclusion criteria included previously untreated patients diagnosed with stage IA1 cervical cancer (2018 FIGO staging system). Exclusion criteria were patients with recurrent cervical cancer, other gynecologic malignancies, and those in a pregnant state. The analysis included treatment patterns, surgical types, and clinicopathologic variables, i.e., nodal metastasis, parametrial involvement, positive surgical margins, deep stromal invasion (DSI), lymph-vascular space invasion (LVSI), adjuvant treatment, 5-year disease-free survival, and 5-year overall survival. All pathologic slides were reviewed by gynecologic pathologists. The Kruskal-Wallis test, Fisher's exact test, the Kaplan-Meier method and log-rank test were used for statistical analysis.

RESULTS Of the 184 patients included in this study, simple hysterectomy was the most common treatment (57.3%), followed by modified radical hysterectomy (MRH) and radical hysterectomy (RH) (27.6% and 9.7% respectively). Conization and radiation were chosen in a few cases. At the median follow up time of 40.8 months, the 5-year disease free survival rate was 99.1% and the 5-year overall survival rate was 95.0%. Pelvic lymph node dissection was done in 62 cases (33.7%), but only one case (0.54%) had pelvic lymph node metastasis.

CONCLUSIONS The surgical and survival outcomes for women with stage IA1 cervical cancer are excellent. They can be effectively treated with less radical interventions such as simple hysterectomy and conization. Lymph node metastasis is rare at this stage (0.54%); therefore, lymphadenectomy may possibly be omitted.

Sonographic Features of Uterine Arteriovenous Malformation: A Case Series

Dhammapoj Jeerakornpassawat, Charuwan Tantipalakorn, Sirinart Sirilert & Theera Tongsong

Abstract

Abstract: Uterine arteriovenous malformation (AVM) is very rare but potentially life-threatening. Early and accurate diagnosis is the cornerstone of its management. The objective of this study is to encourage sonographers to become familiar with a variety of grayscale sonographic features, facilitating rapid recognition of the patterns and prompting them to apply color flow Doppler for a diagnosis of uterine AVM and possible further investigations or interventions. We present six cases of uterine AVM presenting with abnormal uterine bleeding at varying degrees of severity, from abnormal menstruation to life-threatening bleeding following curettage. All initially provided some clues of uterine AVM upon grayscale ultrasound, leading to the application of color Doppler flow to support a diagnosis, with confirmation using abdominal computer tomography angiography (CTA) in most cases, resulting in definitive treatment using uterine artery embolization or other interventions. Most importantly, this study provides various sonographic features of uterine AVM, such as appearances of small tubular structures, spongy patterns, a conceptive-product-like appearance, and spaghetti-like patterns. Hopefully, familiarity with these sonographic features can facilitate practitioners to make an early diagnosis, leading to proper further investigation and intervention, and to prevent serious complications from potentially being caused by this subtle but very serious disorder.

Factors Affecting the Decision on Cannabis Use in Gynecologic Cancer Patients After the Legalization of Cannabis

Chanita Lertaroonchai, Dhammapoj Jeerakornpassawat, Theera Tongsong & Tanarat Muangmool

Abstract

Objective: To characterize the patterns of cannabis use among gynecologic cancer patients, in terms of potential factors influencing their decision-making on cannabis use, the reasons for use or non-use, and sources of information on cannabis use. **Methods:** From March to July 2022, gynecologic cancer patients at a clinic were interviewed and classified into 3 groups: current users, ex-users, and never-users. The received data included: demographic data, cannabis use details, reasons for using and not using, adverse events, satisfaction, and intent to use. Univariate and multivariate analysis were used to identify risk factors influencing decision-making. **Result:** Among 240 participants, 11.67% were classified as current users, 28.33% as ex-users, and 60% as never-users. The significant factors influencing cannabis use decisions were advanced stage and receiving information on cannabis, regardless of the information source. The satisfaction derived from cannabis was due to the enhancement of mood and physical activity, improvement in sleep quality, stimulation of appetite, and mitigation of adverse events associated with cancer treatment. Approximately 60% of users aimed for a cancer cure. The main reasons for quitting were inability to obtain cannabis and absence of persistent cancer symptoms. **Conclusion:** Among Thai patients with gynecologic cancer, 40% had a history of cannabis use. Advanced cancer stage was an independent factor for decision-making on cannabis use. Sources of information on cannabis are non-healthcare providers. Many patients intended to use cannabis for cancer cure. Also, many were satisfied with use because of a relief of unwanted symptoms, indirectly suggesting improvement in quality of life. The main reason for quitting was unavailability. The main reason for never trying was a concern of interference with treatment. Our results may guide the direction of strategy of cannabis use among patients with gynecologic cancers.

Knowledge and Awareness of Human Papillomavirus Infection and Vaccination in Thai Male Youth, Including Men Who Have Sex With Men

Sethawat Sethasathien, Gun Pansuwan, Chotinan Khanoowattana, Thanakrit Rattansiriwongwut, Thanatcha Chinarakbamrung, Pitchayut Inthasorn & Chalaithorn Nantasupha

Abstract

OBJECTIVE There is currently a lack of human papillomavirus (HPV) vaccination policy and education for male youth in Thailand. This study aimed to evaluate Thai male youth's knowledge and awareness of HPV infection and vaccination, determine their HPV vaccination rate, and factors related to the vaccination rate and the level of awareness of HPV.

METHODS A questionnaire survey on HPV vaccination was distributed to educational institutions across different regions of Thailand. Inclusion criteria included Thai male youth aged between 15 and 24 years, regard-less of sexual orientation. Exclusion criteria were inability to access the internet, individuals whose responses were unintelligible, and those who did not complete the questionnaire. The trends of the association between participant characteristics and their HPV knowledge/awareness scores was analyzed using linear regression.

RESULTS A total of 594 individuals responded to the questionnaire. The median score for knowledge was 11 out of 18 and the awareness level was 80%. Higher education level, higher family income, bisexuality, and prior receipt of HPV information were statistically significantly linked to higher HPV knowledge scores. However, only previous receipt of HPV information was associated with an increased awareness level.

CONCLUSIONS Although the level of HPV knowledge and awareness among Thai males was acceptable, less than 50% of participants expressed an intention to get vaccinated. This indicates there is a need to improve the promotion of the HPV vaccine in order to achieve herd immunity.

Assessing generalizability of an AI-based visual test for cervical cancer screening

Syed Rakin Ahmed, Didem Egemen, Brian Befano, Ana Cecilia Rodriguez, Jose Jeronimo, Kanan Desai, Carolina Teran, Karla Alfaro, Joel Fokom-Domgue, Kittipat Charoenkwan, Chemtai Mungo, Rebecca Luckett, Rakiya Saidu, Taina Raiol, Ana Ribeiro, Julia C Gage, Silvia de Sanjose, Jayashree Kalpathy-Cramer & Mark Schiffman

Abstract

A number of challenges hinder artificial intelligence (AI) models from effective clinical translation. Foremost among these challenges is the lack of generalizability, which is defined as the ability of a model to perform well on datasets that have different characteristics from the training data. We recently investigated the development of an AI pipeline on digital images of the cervix, utilizing a multi-heterogeneous dataset of 9,462 women (17,013 images) and a multi-stage model selection and optimization approach, to generate a diagnostic classifier able to classify images of the cervix into “normal”, “indeterminate” and “precancer/cancer” (denoted as “precancer+”) categories. In this work, we investigate the performance of this multiclass classifier on external data not utilized in training and internal validation, to assess the generalizability of the classifier when moving to new settings. We assessed both the classification performance and repeatability of our classifier model across the two axes of heterogeneity present in our dataset: image capture device and geography, utilizing both out-of-the-box inference and retraining with external data. Our results demonstrate that device-level heterogeneity affects our model performance more than geography-level heterogeneity. Classification performance of our model is strong on images from a new geography without retraining, while incremental retraining with inclusion of images from a new device progressively improves classification performance on that device up to a point of saturation. Repeatability of our model is relatively unaffected by data heterogeneity and remains strong throughout. Our work supports the need for optimized retraining approaches that address data heterogeneity (e.g., when moving to a new device) to facilitate effective use of AI models in new settings.

Prediction Models for Perioperative Blood Transfusion in Patients Undergoing Gynecologic Surgery: A Systematic Review

Zhongmian Pan & Kittipat Charoenkwan

Abstract

Abstract: This systematic review aimed to evaluate prediction models for perioperative blood trans- fusion in patients undergoing gynecologic surgery. Given the inherent risks associated with blood transfusion and the critical need for accurate prediction, this study identified and assessed models based on their development, validation, and predictive performance. The review included five studies encompassing various surgical procedures and approaches. Predicting factors commonly used across these models included preoperative hematocrit, race, surgical route, and uterine fibroid characteristics. However, the review highlighted significant variability in the definition of periopera- tive periods, a lack of standardization in transfusion criteria, and a high risk of bias in most models due to methodological issues, such as a low number of events per variable, inappropriate handling of continuous and categorical predictors, inappropriate handling of missing data, improper methods of predictor selection, inappropriate measurement methods for model performance, and inadequate evaluations of model overfitting and optimism in model performance. Despite some models demon- strating good discrimination and calibration, the overall quality and external validation of these models were limited. Consequently, there is a clear need for more robust and externally validated models to improve clinical decision-making and patient outcomes in gynecologic surgery. Future research should focus on refining these models, incorporating rigorous validation, and adhering to standardized reporting practices.

Stage-Affected Quality of Life in Endometrial Cancer Patients.

Chindanai Meksuwan, Nattapol Suppagornmongkol, Nattakan Prompruk, Wanwanut Tawan, Charuwan Tantipalakorn, Chawisa Suradom & Dhammapoj Jeerakornpassawat

Abstract

OBJECTIVE This study aims to compare the aspects of quality of life between early and advanced-stage endometrial cancer patients.

METHODS From January to February 2021, women diagnosed with endo-metrial cancer and treated at Maharaj Nakorn Chiang Mai Hospital were invited to participate. Two qualities of life questionnaires, the European Organization for Research and Treatment of Cancer Quality of Life QLQ-C30 questionnaire (EORTC QLQ-C30) and the CMU Endometrial Cancer Quality of Life (gastrointestinal, urinary, lymphatic, sexual, and hormonal domains) were used. The chi-squared test, the Mann-Whitney U test, and multivariable linear regression were used for statistical analysis.

RESULTS A total of 103 participants were divided into two groups: 65 individuals with early-stage disease and 38 with advanced-stage disease. All participants completed the quality-of-life questionnaires. The two groups were comparable in terms of global health status/QoL for EORTC QLQ-C30. However, the early-stage group had significantly higher functional scales and quality-of-life summary scores than the advanced-stage group. As for the CMU endometrial cancer QoL, the advanced-stage group had more negative issues related to the gynecologic and hormonal system compared to the early-stage group.

CONCLUSIONS Women with endometrial cancer generally have a good quality of life. Survivors of advanced stages may have a quality of life similar to those in the early stage but with a higher incidence of gastrointestinal, sexual, and hormonal complications.

The effect of single dose of gonadotropin-releasing hormone agonist injection in frozen-thawed embryo transfer on pregnancy outcomes: A systematic review and meta-analysis

Pongpawan Chienvichai, Natpat Jansaka, Usanee Sanmee & Kittipat Charoenkwan

Abstract

This systematic review and meta-analysis of randomized controlled trials aimed to evaluate the effect of a single-dose gonadotropin-releasing hormone agonist administration in the frozen-thawed embryo transfer cycle on pregnancy outcomes. A literature search was strategically conducted using PubMed, EMBASE, and the Cochrane Controlled Trials Register. The primary outcome was the clinical pregnancy rate. The secondary outcomes combined chemical pregnancy rate, implantation rate, ongoing pregnancy rate, live birth rate, miscarriage rate, and extrauterine pregnancy rate. Out of the 1594 citations that were found, only six met the criteria for being included in the meta-analysis. The clinical pregnancy rate was higher in the treatment group than in the control group (52.05% vs. 47.29%; $p=0.04$; $RR=1.09$; 95% $CI=1.00-1.18$). According to subgroup analysis based on the natural cycle, the clinical pregnancy rate with the agonist administration is significantly higher (43.75% vs. 27.35%; $p=0.01$; $RR=1.6$; 95% $CI=1.10-2.32$). However, there was no difference between the groups in terms of artificial cycles ($p=0.80$; 95% $CI=0.96-1.20$). The secondary outcomes did not show significant differences. We concluded that supplementing with a single dose of gonadotrophin-releasing hormone agonist can marginally increase the clinical pregnancy rate, particularly in the natural cycle. Other pregnancy outcomes do not improve with the treatment.

A comparative study of self-collected versus clinician-collected specimens in detecting high-risk HPV infection: a prospective cross-sectional study

Natnipa Parapob, Suree Lekawanvijit, Theera Tongsong, Kittipat Charoenkwan & Charuwan Tantipalakorn

Abstract

Objective

The primary objective of this study was to compare the detection rate of high-risk human papillomavirus (HPV) infection between self-sampling to collect vaginal specimens and clinician sampling to collect cervical specimens, as well as the correlation between the two techniques. The secondary objective was to assess satisfaction with self- sampling for HPV testing.

Methods

From October 2021 to September 2022, women positive for HPV 16/18 and other 12 high-risk HPV genotypes and cytological Ascus were enrolled. All participants were instructed on the method for self-collection of HPV samples. Self-collected vaginal samples and clinician-collected cervical samples were subjected to HPV DNA typing.

Results

Paired self- and clinician-collected specimens were obtained from 104 women with positive HPV-positive results. The detection rate of high-risk HPV infection was comparable between the two techniques: 79/98 (80.6%) vs. 81/98 (82.7%) for the self-sampling and clinician-sampling techniques, respectively (McNemar's test; $P=0.774$). The agreement in detecting HPV infection was substantial, with a kappa coefficient of 0.75. More than 90% of the participants rated self-collection as satisfactory to very satisfactory because of its convenience and safety. Regarding methods of further follow-up, 51% of the participants chose self-sampling, whereas the remaining participants preferred collection by clinicians. No intervention-related complications were observed.

Conclusion

The self-sampling technique for HPV testing was as effective as the clinician-sampling technique, and both techniques were substantially correlated in detecting high-risk HPV infection. The self-sampling method appears to be highly satisfactory and may provide better compliance for the detection of cervical HPV infection.

Accuracy of O-RADS System in Differentiating Between Benign and Malignant Adnexal Masses Assessed via External Validation by Inexperienced Gynecologists

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Abstract

Objective: To evaluate the accuracy of the O-RADS system in differentiating between benign and malignant adnexal masses, as assessed by inexperienced gynecologists. **Methods:** Ten gynecologic residents attended a 20 h training course on the O-RADS system conducted by experienced examiners. Following the training, the residents performed ultrasound examinations on patients admitted with adnexal masses under supervision, recording the data in a database that included videos and still images. The senior author later accessed this ultrasound database and presented the cases offline to ten residents for O-RADS rating, with the raters being blinded to the final diagnosis. The efficacy of the O-RADS system by the residents and inter-observer variability were assessed. **Results:** A total of 201 adnexal masses meeting the inclusion criteria were evaluated, consisting of 136 (67.7%) benign masses and 65 (32.3%) malignant masses. The diagnostic performance of the O-RADS system showed a sensitivity of 90.8% (95% CI: 82.2–96.2%) and a specificity of 86.8% (95% CI: 80.4–91.8%). Inter-observer variability in scoring was analyzed using multi-rater Fleiss Kappa analysis, yielding Kappa indices of 0.642 (95% CI: 0.641–0.643). The false positive rate was primarily due to the misclassification of solid components in classic benign masses as O-RADS-4 or O-RADS-5. **Conclusions:** The O-RADS system demonstrates high diagnostic performance in distinguishing benign from malignant adnexal masses, even when used by inexperienced examiners. However, the false positive rate remains relatively high, mainly due to the over-interpretation of solid-appearing components in classic benign lesions. Despite this, inter-observer variability among non-expert raters was substantial. Incorporating O-RADS system training into residency programs is beneficial for inexperienced practitioners. This study could be an educational model for gynecologic residency training for other systems of sonographic features.