



KEIMYUNG UNIVERSITY



DONGSAN HOSPITAL

# Role of Robotic Surgery for Gynecologic Cancer

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*Keimyung University Dongsan Hospital*

*President of ASGRS(Asian Society of Gynecologic Robotic Surgery)*

계명대학교 동산병원  
KEIMYUNG UNIVERSITY DONGSAN HOSPITAL



**Since its foundation in 2015, ASGRS is now at the center of leading the Asian gynecology and robotic surgery. Based on the spirit of challenge, we are having a future-oriented communication with consideration and solidarity.**







	robotic (n=17)	laparoscopic (n=17)	P-value
Age (years)	37.64 ± 3.2	36.99 ± 3.8	0.9992 <sup>a</sup>
Body mass index (BMI)	21.24 ± 2.8	20.76 ± 2.8	0.6000 <sup>a</sup>
Preoperative hemoglobin (g/dL)	12.4 ± 1.2	12.4 ± 1.2	0.9999 <sup>a</sup>
Preoperative albumin (g/dL)	3.8 ± 0.2	3.8 ± 0.2	0.9999 <sup>a</sup>
Preoperative creatinine (mg/dL)	0.8 ± 0.1	0.8 ± 0.1	0.9999 <sup>a</sup>
Preoperative total bilirubin (mg/dL)	0.8 ± 0.1	0.8 ± 0.1	0.9999 <sup>a</sup>
Preoperative aspartate aminotransferase (U/L)	21 ± 10	21 ± 10	0.9999 <sup>a</sup>
Preoperative alanine aminotransferase (U/L)	18 ± 10	18 ± 10	0.9999 <sup>a</sup>
Preoperative ferritin (ng/mL)	152 ± 112	144 ± 112	0.9999 <sup>a</sup>
Preoperative ferritin (ng/mL)	10 ± 10	10 ± 10	0.9999 <sup>a</sup>
Number of myomas (median)	1	1	0.9999 <sup>a</sup>

Original Article March 25, 2022

## Single-port myomectomy: robotic versus laparoscopic

Jong Wook Seo, In Ok Lee, Hye Soo Yoon, et al.

Gyne Robot Surg. 2022;3(1):8-12.

**Objective:** To compare the perioperative outcomes of robotic single-site myomectomy (RSSM) and laparoendoscopic single-site myomectomy (LSSM). **Methods:** From January 2017 to December 2019, electronic medical records of the consecutively held 17...



AHEAD-OF PRINT CURRENT ISSUE ARCHIVE MOST CITED

Editorial March 25, 2022

## Overview of the inaugural congress of Asian Society for Gynecologic Robotic Surgery (ASGRS) 2015

Jiheum Paek, Joseph S. Ng

Gyne Robot Surg. 2022;3(1):1-7.

Full text PubReader ePub PDF



Original Article March 25, 2022

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Society of Korean Robotic  
Gynecologic Surgery

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AUTHOR'S INDEX

# ARGC 2019 (ASIAN ROBOTIC GYNECOLOGY CONGRESS)

# ASIAN ROBOTIC GYNECOLOGY CONGRESS 2019



2019. 10. 24<sup>THU</sup> – 25<sup>FRI</sup>

Sheraton Seoul Palace Gangnam Hotel, Seoul, Korea

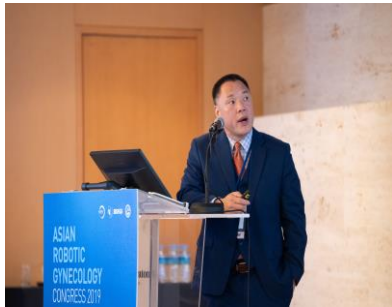


# ARGC 2019 (ASIAN ROBOTIC GYNECOLOGY CONGRESS)



ASIAN  
ROBOTIC  
GYNECOLOGY  
CONGRESS 2019

October 24 – 25 2019







June 17<sup>th</sup> (Fri) - 18<sup>th</sup> (Sat), 2022  
Grand Hyatt Jeju, Korea



# ASGRS 2022







# ▶ ASGRS 2023

◀ Asian Society for  
Gynecologic Robotic Surgery  
Congress 2023



June 16<sup>th</sup> (Fri) -  
17<sup>th</sup> (Sat), 2023  
Grand Hyatt Jeju, Korea

Organization  Asian Society for Gynecologic Robotic Surgery  Society of Korean Robot Gynecologic Surgery

Asian Society for Gynecologic Robotic Surgery Congress 2023 (ASGRS 2023) Secretariat.  
Double You Plan E-mail: [asgrs.office@gmail.com](mailto:asgrs.office@gmail.com), [info@doubleyou.co.kr](mailto:info@doubleyou.co.kr) Homepage: [www.asgrs2023.org](http://www.asgrs2023.org)





# What we need in Robotic Surgery



ROBOTICS



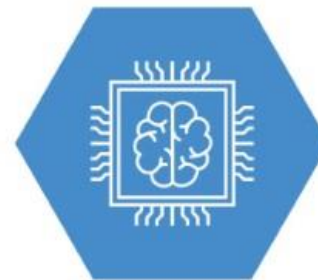
ADVANCED  
INSTRUMENTATION



ENHANCED  
VISUALIZATION



CONNECTIVITY



DATA ANALYTICS &  
MACHINE LEARNING

- We need to combine the power of robotics, advanced instrumentation, enhanced visualization, connectivity and data analytics into one smart, powerful, connected platform for the best of surgery outcome.



# Robotic surgery in recent Gynecologic cancer

## Minimally invasive surgery versus laparotomy for radical hysterectomy in the management of early-stage cervical cancer: Survival outcomes



Benny Brandt<sup>a</sup>, Vasileios Sioulas<sup>a</sup>, Derman Basaran<sup>a</sup>, Theresa Kuhn<sup>a</sup>, Katherine LaVigne<sup>a</sup>, Ginger J. Gardner<sup>a,b</sup>, Yukio Sonoda<sup>a,b</sup>, Dennis S. Chi<sup>a,b</sup>, Kara C. Long Roche<sup>a,b</sup>, Jennifer J. Mueller<sup>a,b</sup>, Elizabeth L. Jewell<sup>a,b</sup>, Vance A. Broach<sup>a,b</sup>, Oliver Zivanovic<sup>a,b</sup>, Nadeem R. Abu-Rustum<sup>a,b</sup>, Mario M. Leitao Jr<sup>a,b,\*</sup>

<sup>a</sup> Gynecology Service, Department of Surgery, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021, USA

<sup>b</sup> Department of Obstetrics and Gynecology, Weill Cornell Medical College, New York, NY 10065, USA





# Robotic surgery in recent Gynecologic cancer

Contents lists available at ScienceDirect

Gynecologic Oncology

journal homepage: [www.elsevier.com/locate/ygyno](http://www.elsevier.com/locate/ygyno)



## Long-term survival in obese patients after robotic or open surgery for endometrial cancer

Anna Lindfors<sup>a,b,\*</sup>, Heshoo Heshar<sup>a,b</sup>, Claudia Adok<sup>c</sup>, Karin Sundfeldt<sup>a,b</sup>, Pernilla Dahm-Kähler<sup>a,b</sup>



# Robotic surgery in recent Gynecologic cancer

## Robot-assisted surgery for women with endometrial cancer: Surgical and oncologic outcomes within a Belgium gynaecological oncology group cohort

A. Kakkos <sup>a,\*</sup>, C. Ver Eecke <sup>b</sup>, S. Ongaro <sup>a</sup>, K. Traen <sup>c</sup>, F. Peeters <sup>d</sup>, Ph Van Trappen <sup>e</sup>,  
A. Laenen <sup>f</sup>, E. Despierre <sup>c</sup>, E. Van Nieuwenhuysen <sup>b</sup>, I. Vergote <sup>b</sup>, F. Goffin <sup>a</sup>

A. Kakkos, C. Ver Eecke, S. Ongaro et al. European Journal of Surgical Oncology 47 (2021) 1117e1123



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## Laparoscopic vs. robotic-assisted laparoscopy in endometrial cancer staging: large retrospective single-institution study

Emanuele Perrone <sup>1</sup>, Ilaria Capasso <sup>1,2</sup>, Tina Pasciuto <sup>3</sup>, Alessandro Gioè <sup>1,2</sup>,  
Salvatore Gueli Alletti <sup>1</sup>, Stefano Restaino <sup>1</sup>, Giovanni Scambia <sup>1,2</sup>,  
Francesco Fanfani <sup>1,2</sup>

J Gynecol Oncol. 2021 May;32(3):e45



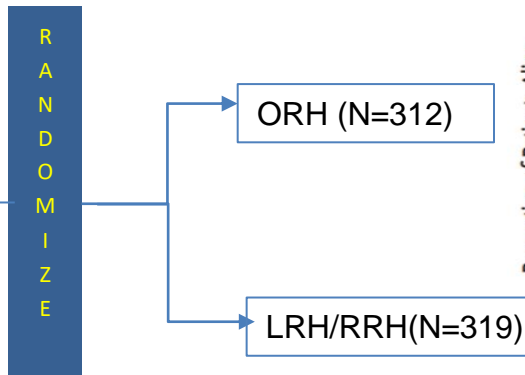


# LACC trial

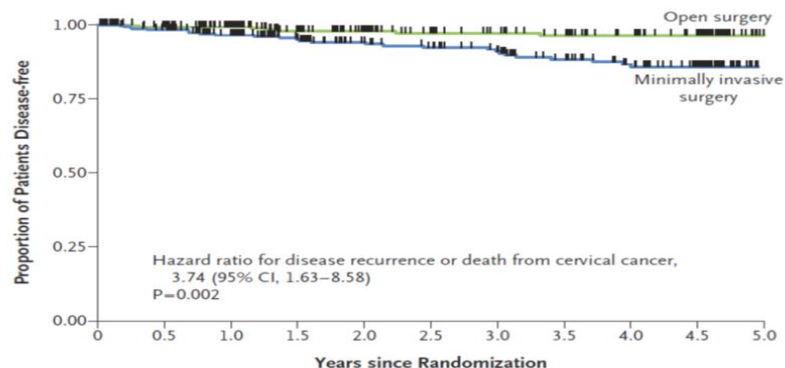


Open ; June 2008  
Accrual ; 631  
Closed ; June 2017

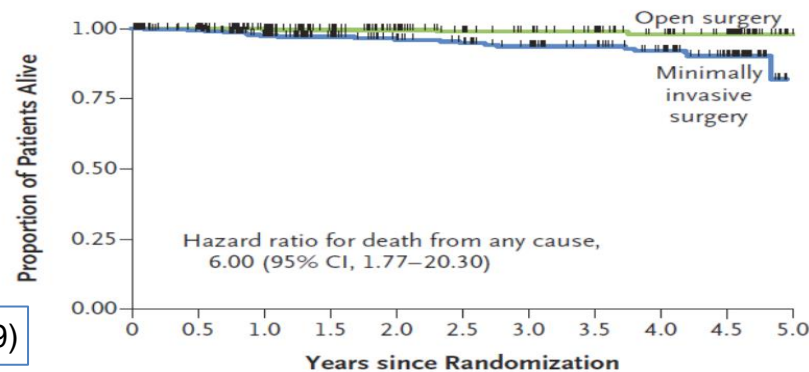
Stage IA1 LVSI,  
IA2, IB1  
SqCC, ADC, or  
adenoSqCC  
cervical ca.



## Disease-free Survival



## Overall Survival

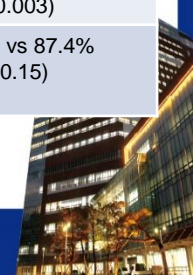


# MIS (Robot and LSC) vs open

Chong GO. Gynecologic Robotic Surgery | Vol 2, No. 2, September 2021

Year	Nation	Design	N (Robot vs LSC vs open)	Period	Stage	Op time	Blood loss	LN's	Stay	Cx	Recurrence (Progression)	Death
2008	USA	Retrospective, single	27 vs 31 vs 35	2003-2006 1993-2006	IA2-IB2	Open, Robot	MIS	=	MIS	=	NA	NA
2009	USA	Retrospective, single	32 vs 17 vs 14	2006-2008 2002-2006	IA2-IB2	=	MIS	Robot	MIS	=	NA	NA
2011	USA, Brazil	Prospective, multi	34 vs 31 vs 30	2007-2010	IA2-IIA	Open	MIS	NA	MIS	=	NA	NA
2011	Norway	Prospective, single	35 vs 7 vs 26	2005-2009 2004-2005	IA1-IB1	Open	Robot	Open	Robot	NA	5 recur in only Robot	NA
2014	Taiwan	Retrospective, single	32 vs 24 vs 44	NA	IA-IIB	Robot	MIS	=	MIS	=	95.8 vs 90.6 vs 90.9%	NA
2016	USA	Retrospective, single	58 vs 49 vs 39	2009-2013	IA2-IIB	LSC	Robot	NA	Robot	Robot	89.7 vs 89.8 vs 84.6%	96.6 vs 95.9 vs 92.3%
2018	Italy	Retrospective, multi	88 vs 152 vs 101	2001-2016	IB1	=	MIS	Open	MIS	=	5yr 89.5 vs 87.2 vs 91.3% (MIS=Open)	5yr 88.8 vs 89.7 vs 88.7% (MIS=Open)
2018	USA et al.	Prospective RCT	319 (84.4% LSC) vs 312	2008-2017	IA1-IB1	NA	NA	NA	NA	=	3yr 91.2 vs 97.1%	3yr 93.8 vs 99.0%
2019	Canada	Retrospective, multi	473 (89.6% LSC) vs 485	2006-2017	IA-II	NA	NA	NA	Robot	=	16.2 vs 8.4% (p=0.008)	12.5 vs 5.4% (p=0.019)
2020	EU	Retrospective, multi	291 (78.5% LSC) vs 402	2013-2014	IB1	NA	NA	NA	NA	NA	4.5yr 79 vs 89% (p=0.003)	4.5yr 89 vs 97% (p=0.003)
2020	USA	Retrospective, single	117 (90.6% Robot) vs 79	2007-2017	IA1-IB1	NA	NA	NA	NA	MIS	5yr 87.0 vs 86.6% (p=0.93)	5yr 96.5 vs 87.4% (p=0.15)

There is a curious shift in opinion seen before and after 2018.





# MEMORY study: Multicenter study of MIS vs Open Radical hYsterectomy

*M.M. Leitao, et al. Gynecologic Oncology 166 (2022) 417–424*



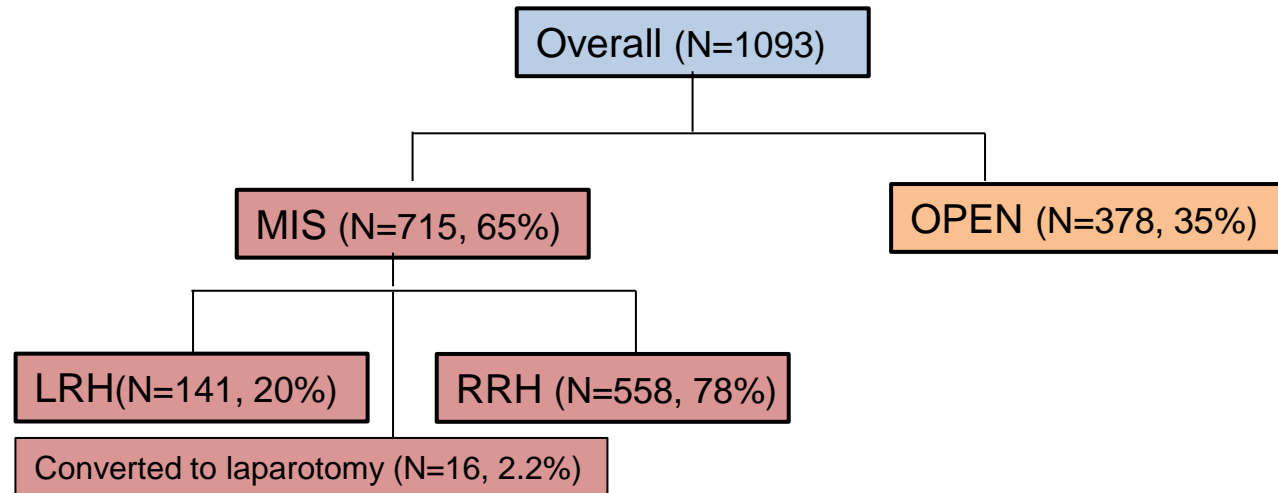
# Objective

- Regardless of the LACC trial's findings, there are still many unanswered questions.
  - in relation to tumor size, stage, cone biopsy only lesions, tumor containment technique improvements, individual surgeon outcomes, and preoperative assessments, among others.
- In this study, we sought to evaluate the **oncologic outcomes** of MIS versus OPEN radical hysterectomy for early-stage cervical cancer among a group of **skilled MIS gynecologic oncologists in the US and Canada**.



# Results

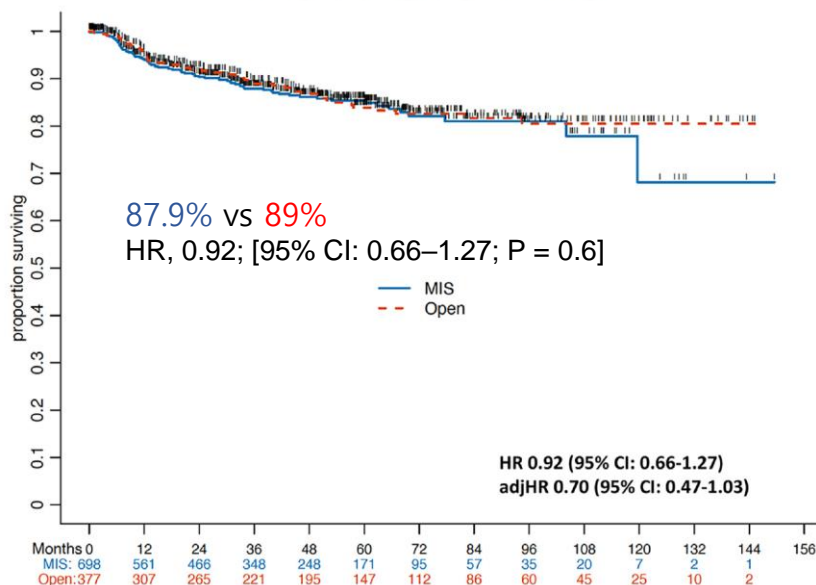
- ✓ Flow chart of the study population



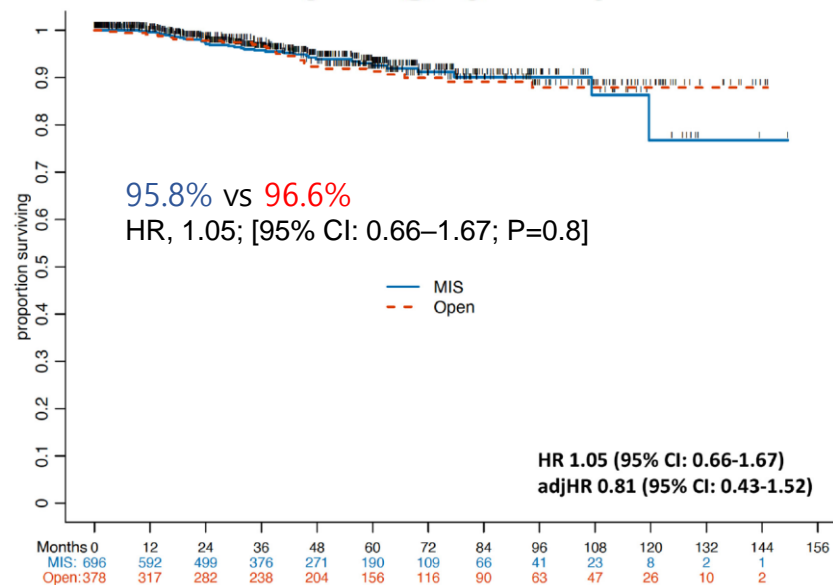


# 3-yr PFS / OS for the MIS and OPEN cohorts.

## PFS by Surgery Group



## OS by Surgery Group



This study showed that an MIS compared to OPEN RH by an experienced gynecologic oncologist for cervical cancer did not appear to compromise oncologic outcomes, with similar PFS and OS.



# Discussion

## 1. Limitations of the MEMORY study

- Retrospective nature
  - ✓ potential biases of selection and information
- The median follow-up time in the MIS group was also shorter than that of the OPEN group  
(38.5months vs. 54.98months, respectively).
- No comment on the use of manipulators or method of colpotomy
  - ✓ The vast majority of the cases were performed with a manipulator and an intracorporeal colpotomy.
- No comment on how many cases had undergone a prior cone biopsy.



# Discussion

## 2. Debates in the LACC trial

- 1) The 95% CI includes the pre-specified non-inferiority boundary
  - ✓ The results may be considered inconclusive.
  
- 2) The open arm of the LACC trial had the best ever reported outcomes.
  - ✓ The 4.5-year DFS rate in the open arm of the LACC trial was **96.5%**, compared to 86% in the MIS arm.
  - ✓ The other studies have nearly all reported 4.5–5–year DFS/PFS rates of approximately **90%**.
  
- 3) Preoperative MRI was not required
  - ✓ Which may have affected the inclusion of tumors larger than 4 cm.
  
- 4) No of the external validity





# Discussion

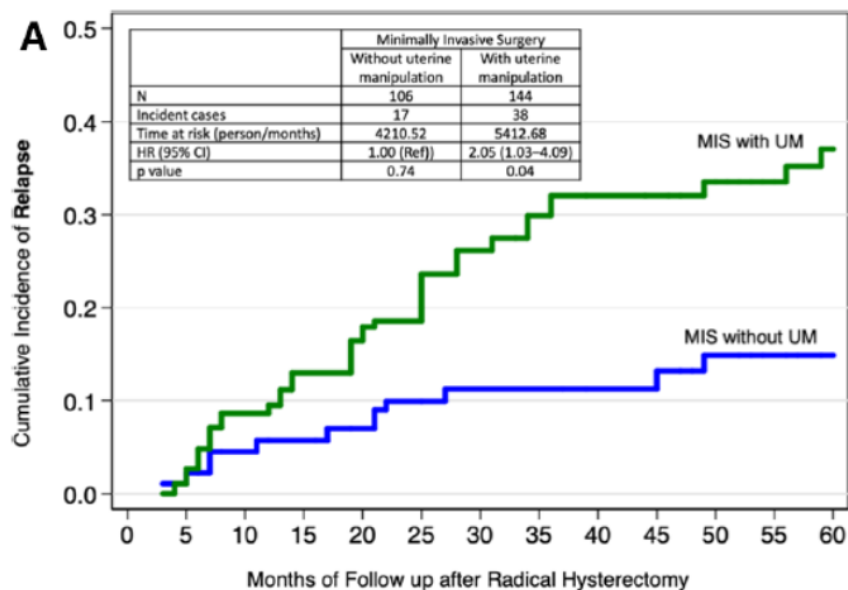
## 2. Debates in the LACC trial

### 4) Tumor contamination

- Effect of the insufflation gas (CO<sub>2</sub>)
- Routine use of uterine manipulators

**SUCCOR study: an international European cohort observational study comparing minimally invasive surgery versus open abdominal radical hysterectomy in patients with stage IB1 cervical cancer**

Chiva L et al. 2020, In J Gynecol Cancer



# Discussion

## 2. Debates in the LACC trial

### 4) Tumor contamination

- Effect of the insufflation gas (CO2)
- Routine use of uterine manipulator

Patterns of recurrence and survival after abdominal versus laparoscopic/robotic radical hysterectomy in patients with early cervical cancer

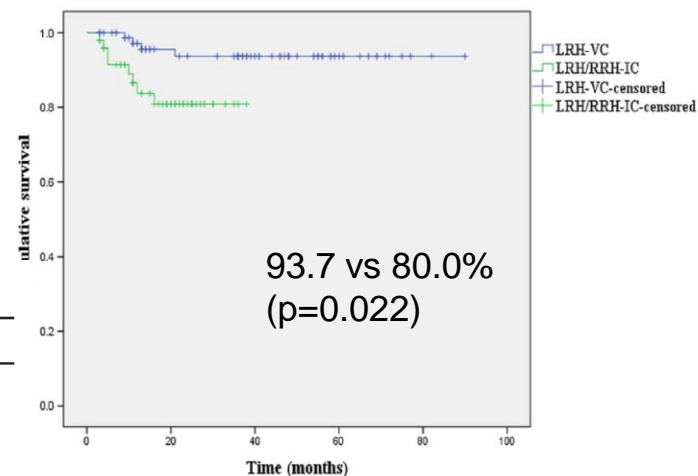
LRH-VC  
(N=79)

vs.

LRH/RRH-IC  
(N=49)

Table 5 Clinicopathologic characteristics of patients with intraperitoneal recurrence

Patients	1	2	3	4	5	6
Sites of recurrence	Right paracolic gutter	Right paracolic gutter	Subhepatic area	Splenic hilar surface (Splenectomy)	Bowel serosa (Colectomy)	Peritoneal & omental mass
Recurrence (months)	3	4	10	12	16	9
Surgical and colpotomic	LRH-IC	LRH-IC	LRH-IC	LRH-IC	RRH-IC	LRH-VC



Kong T-W et al. 2016 J Obstet Gynaecol Res



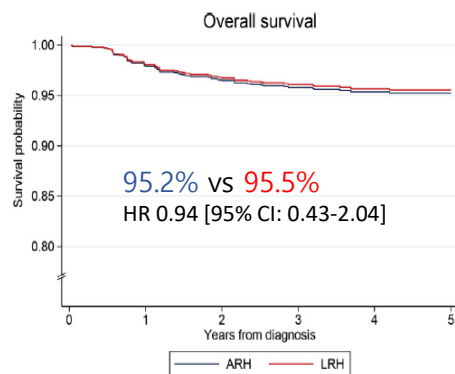
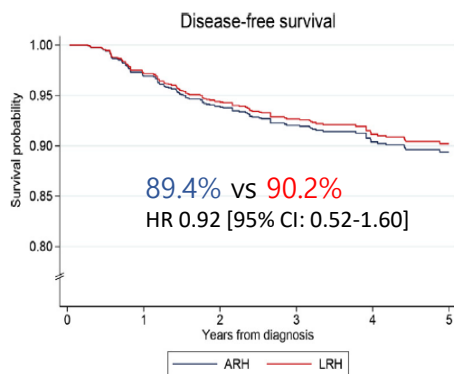
# Discussion

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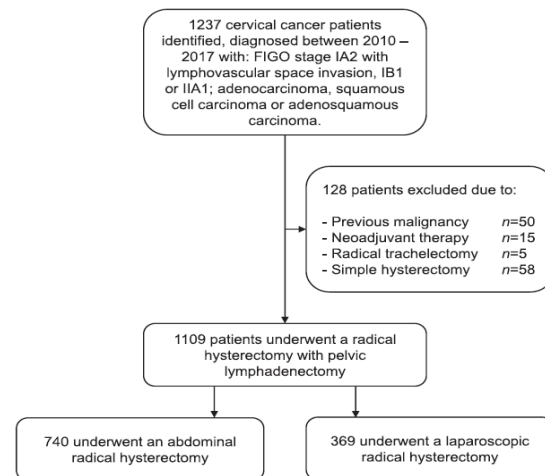
### 5) “Con” papers

- ✓ large population-based studies

Survival of patients with early-stage cervical cancer after abdominal or laparoscopic radical hysterectomy: a nationwide cohort study and literature review



### Netherlands Cancer Registry



Hans H.B. Wenzel et al. European Journal of Cancer 133 (2020) 14e21



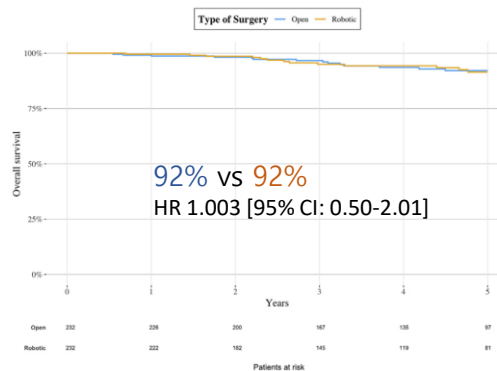
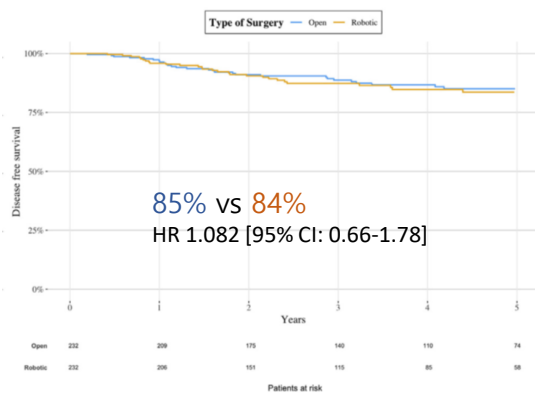
# Discussion

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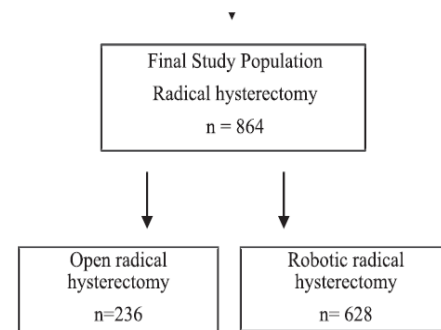
### 5) “Con” papers

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No survival difference between robotic and open radical hysterectomy for women with early-stage cervical cancer: results from a nationwide population-based cohort study



Swedish cancer registry



Emilia A. et al. European Journal of Cancer 116 (2019) 169e177



# Ongoing RCT



# ROCC/GOG3043 trial (NCT048331580)



## GOG-3043 (ROCC Trial)

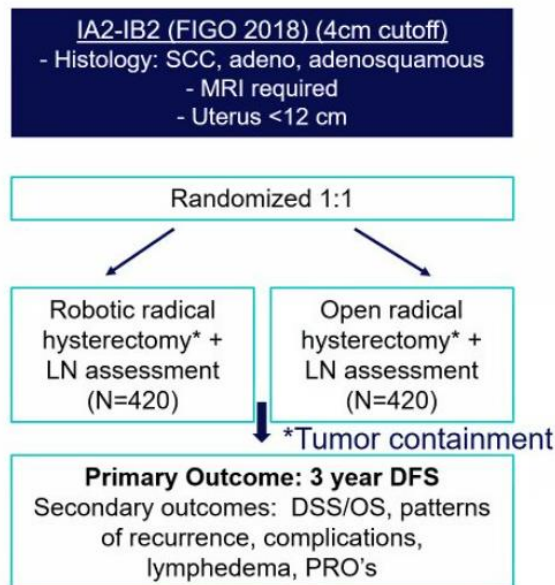
A Randomized Controlled  
Trial of Robotic versus Open Radical  
Hysterectomy for Cervical Cancer

GOG FOUNDATION<sup>®</sup>

GOG PARTNERS

#GOGROCC

PI: Kristin Bixel  
Mario Leitao



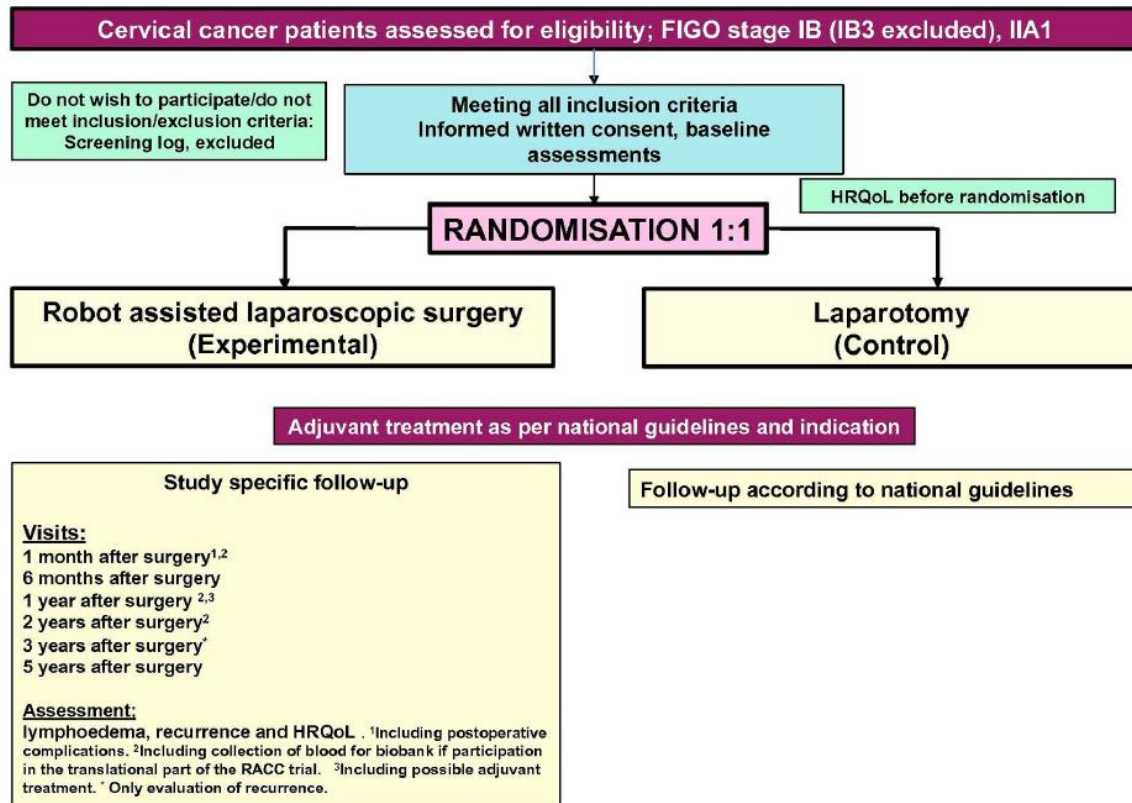
GOG FOUNDATION<sup>®</sup>

- Sample size ; 840 patients
- Primary endpoint ; 3-yr DFS
- From March 2022 to August 2029
- No use of uterine manipulator
- Preop MRI





# RACC trial (NCT03719547)



- Sample size ; 800 patients
- Primary endpoint ; 5-yr Recurrence-free survival
- From May 2019 to Feb 2027
- No use of uterine manipulator



# Robotic Surgery for Cervical Cancer

Received: 24 September 2020 | Revised: 1 March 2021 | Accepted: 24 March 2021

DOI: 10.1002/rcs.2255



**ORIGINAL ARTICLE**

The International Journal of Medical Robotics  
and Computer Assisted Surgery



WILEY

## Robotic single-site versus multiport radical hysterectomy in early stage cervical cancer: An analysis of 62 cases from a single institution

Tae-Kyu Jang  | Hyewon Chung | Sang-Hoon Kwon | So-Jin Shin |  
Chi-Heum Cho 

- This study aimed to compare the surgical outcomes and cost of robotic single-site radical hysterectomy (RSSRH) versus robotic multiport radical hysterectomy (RMPRH) with pelvic lymph node dissection in early stage cervical cancer.
- Sixty-two patients with early stage cervical cancer were recruited between November 2011 and July 2017 and underwent RSSRH (20 patients) and RMPRH (42 patients) for early stage cervical cancer using the da Vinci Si Surgical System.

Jang TK, Chung H, Kwon SH, Shin SJ, Cho CH. Int J Med Robot. 2021;17(4): e2255.



# Robotic Surgery for Cervical Cancer

Parameter	RSSRH (N = 20)	RMPRH (N = 42)	p
<Intraoperative>			
Estimated blood loss (ml)	215.0 (50-500)	221.4 (100-500)	0.911
Blood transfusion	1 (4.2)	3 (7.1)	0.759
Conversion to laparoscopy or laparotomy	0	0	-
Major intraoperative complication <sup>a</sup>	0	0	-
Operation time (min), median			
Docking time	6.5 (4-14)	10.0 (3-20)	0.107
Console time	102.5 (51-158)	117.5 (63-255)	0.112
Closure time	25.0 (13-45)	25.0 (10-50)	0.471
Total	186.0 (128-259)	194.0 (138-329)	0.1
<Postoperative>			
Major postoperative complications <sup>b</sup>	1 (5.0)	2 (4.8)	0.967
Haemoglobin drop (g/dl)	1.3 (0.3-2.5)	1.5 (0.2-4.0)	0.224
Lymph node retrieval	9.5 (4-17)	18.0 (3-36)	<0.001
Postoperative hospital discharge (days)	6.0 (4-14)	11.0 (4-27)	<0.001
Total hospital charge (won)	6323 422	9158 426	<0.001

Jang TK, Chung H, Kwon SH, Shin SJ, Cho CH. Int J Med Robot. 2021;17(4): e2255.



# Robotic Surgery for Cervical Cancer

Parameter	RSSRH (N = 20)	RMPRH (N = 42)	p
Postoperative biopsy			
Tumour size (mm), range	16.2 (8-25)	18.5 (6-27)	0.263
Lymphovascular space invasion	7 (35.0)	10 (23.8)	0.377
Lymph node metastasis	0 (0.0)	2 (4.8)	0.556
Parametrium metastasis	1 (5.0)	4 (9.5)	0.663
Adjuvant therapy	7 (35.0)	13 (31.0)	0.75
Radiation	1 (5.0)	1 (2.4)	
Chemoradiation	6 (30.0)	12 (28.6)	
Recurrence	1 (5.0)	2 (4.8)	0.967
Alive	19 (95.0)	40 (95.2)	0.967
Death	1 (5.0)	2 (4.8)	
Due to disease	1 (5.0)	1 (2.4)	
Related to disease	0 (0.0)	1 (2.4)	

Note: Data are presented as number (%) or median (range).

Abbreviations: RMPRH: robotic multiport radical hysterectomy; RSSRH: robotic single-site radical hysterectomy.

Jang TK, Chung H, Kwon SH, Shin SJ, Cho CH. Int J Med Robot. 2021;17(4): e2255.





# Robotic Surgery for Cervical Cancer

- RSSRH procedure was safer, more feasible, cost-effective and had better short-term perioperative outcomes than RMPRH.
- This technique could also be used to train residents and surgical fellows in well-selected cases.
- Long- term rates of complications and postoperative radiotherapy or chemotherapy associated with the procedures need to be explored.
- Randomized trials are needed to determine whether robotic single- site techniques may offer clinical advantages over conventional procedures.



# Robotic Surgery for Cervical Cancer



*Article*

## Robotic Single-Site Radical Hysterectomy for Early Cervical Cancer: A Single Center Experience of 5 Years

Changho Song<sup>†</sup>, Tae-Kyu Jang<sup>†</sup>, Soomin Kong, Heeju Kang, Sang-Hoon Kwon and Chi-Heum Cho<sup>\*</sup>

- A 5-year experience of robotic single-site radical hysterectomy (RSRH) focused on the surgical and oncologic outcomes
- This retrospective study included 44 cases of RSRH in patients with early cervical cancer, which were performed at Keimyung university Dongsan hospital, Daegu, Korea from 2015 to 2020.

*J. Pers. Med.* **2023**, *13*, x. <https://doi.org/10.3390/xxxxx>



# Robotic Surgery for Cervical Cancer

- The indications for RSRH were patients with FIGO stage Ia2, Ib1, and Ib2 without a risk of massive adhesion owing to previous operations.
- The robot platform used in this study was the da Vinci Si or X (Intuitive surgical, Sunnyvale, CA, USA)



# Robotic Surgery for Cervical Cancer

**Table 1.** Patient characteristics.

Variables	Total (n=44)
Age {median (range), years}	45 (30 – 65)
Age > 60 (n, %)	5 (11.4)
BMI (mean ± SD, kg/m <sup>2</sup> )	23.96 ± 4.04
BMI < 18.5 (n, %)	4 (9.1)
BMI 18 to < 25 (n, %)	26 (59.1)
BMI 25 to < 30 (n, %)	10 (22.7)
BMI ≥ 30 (n, %)	4 (9.1)
Parity	
Multiparous (n, %)	38 (86.4)
Nulliparous (n, %)	6 (13.6)
Pre-operative FIGO stage	
Stage Ia1 (n, %)	0 (0.0)
Stage 1a2 (n, %)	5 (11.4)
Stage 1b1 (n, %)	27 (61.3)
Stage 1b2 (n, %)	12 (27.3)
Stage 1b3 (n, %)	0 (0.0)
Histologic type	
Squamous cell carcinoma (n, %)	33 (74.0)
Adenocarcinoma (n, %)	11 (26.0)

SD, standard deviation; BMI, body mass index; FIGO, International Federation of Gynecology and Obstetrics.





# Robotic Surgery for Cervical Cancer

Table 2. Surgical outcome.

Variables	Total (n=44)
Total operation time (mean ± SD)	156.07 ± 31.77 min
Setting time (mean ± SD)	23.49 ± 6.67 min
Preparation time (mean ± SD)	8.42 ± 4.58 min
Docking time (mean ± SD)	6.05 ± 2.85 min
Console time (mean ± SD)	95.81 ± 24.95 min
Closure time (mean ± SD)	22.30 ± 7.55 min
Conversion to laparoscopy or laparotomy (n, %)	0 (0)
Blood transfusion (n, %)	0 (0)
Retrieved lymph nodes (median [range])	9 (2 – 20)
Estimated blood loss (mean ± SD)	189.77 ± 132.32 ml
Complication	
Minor (n, %) <sup>a</sup>	10 (22.7)
Major (n, %) <sup>b</sup>	2 (4.5)
Days of hospital stay (median [range])	5 (3 – 60) days

<sup>a</sup>Minor complications includes 3 cases of excessive drainage, 4 cases of voiding difficulties, 2 cases of abdominal pain, and 1 case of free fluid collection. <sup>b</sup>Major complication includes 1 case of vaginal cuff disruption and 1 case of rectal perforation. SD, standard deviation.



# Robotic Surgery for Cervical Cancer

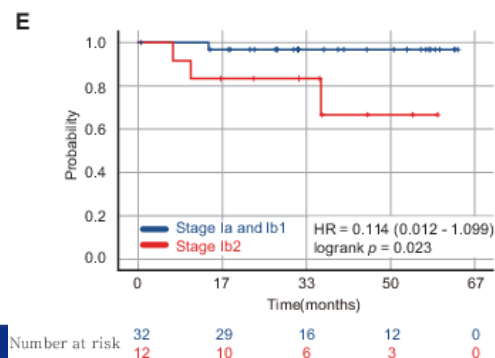
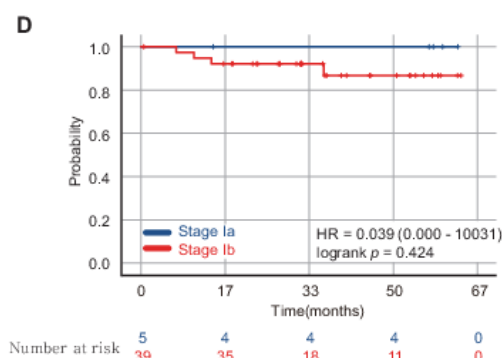
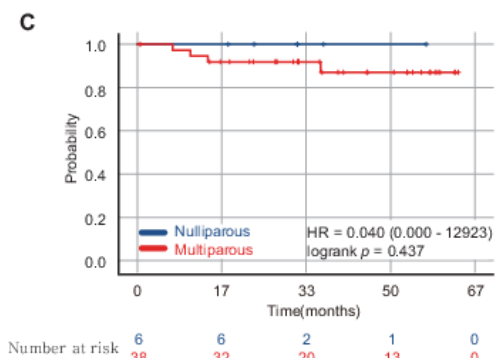
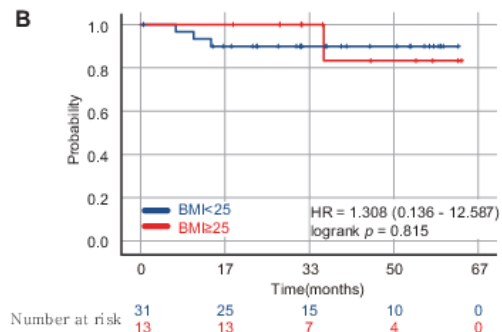
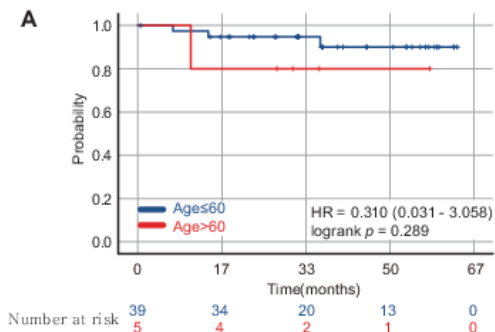
**Table 4.** Oncologic outcomes.

Variables	Total (n=44)
Tumor size	
< 2cm	32 (72.7)
≥ 2 cm, < 3cm	9 (20.5)
≥ 3 cm, < 4cm	3 (6.8)
Tumor involvement of parametrium	
no	41 (93.2)
present	3 (6.8)
Tumor involvement of resection margin	
no	42 (95.5)
present	2 (4.5)
Tumor involvement of lymph node	
no	34 (77.3)
present	10 (22.7)
Adjuvant therapy (n, %)	15 (34.1)
RTx only (n, %)	2 (4.5)
CCRT (n, %)	13 (29.5)
Recurrence (n, %)	4 (9.1)
Recurred site	
Local recurrence (n)	2
Distant metastasis (n)	2
Time to recur (median, range)	16.9 (6.9 – 36.2) months
Cancer related death (n)	1

CCRT, chemo-radiotherapy; RTx, Radiotherapy.



# Robotic Surgery for Cervical Cancer



Patients with stages Ia2 and Ib1 cervical cancer showed better disease-free survival (DFS) than those with stage Ib2 cervical cancer following robotic single site radical hysterectomy.

*J. Pers. Med.* 2023, 13, x. <https://doi.org/10.3390/xxxxx>



# Robotic Surgery for Cervical Cancer

- A recent randomized control trial reported that the DFS and overall survival of patients with cervical cancer who underwent MIS in radical hysterectomy is inferior to that in open abdominal radical hysterectomy
- The survival analysis in our study consistently demonstrated that patients with stage under Ib1 showed significantly favorable DFS than those in stage Ib2 and that stage was the only factor that influenced DFS.
- we presented the surgical and oncologic outcomes of RSRH in early stage cervical cancer treatment. RSRH may be considered as a feasible treatment option for early stage cervical cancer patients.

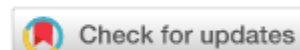




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## Video Article

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## Case report of lighted ureteral stent insertion with robotic single-site radical hysterectomy in early cervical cancer treatment

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# **Lighted ureteral stent insertion with robot assisted single-site radical hysterectomy in early cervical cancer treatment**

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## Conclusion

- ✓ Since the introduction of the single-site robot in 2014, RSS surgery has been performed in the gynecological cancer area, and it has been confirmed that the long-term survival rate and the surgical outcome are good in the well-designed surgical indications so far.
- ✓ It shows good results in the area of gynecological cancer attempted in appropriate indications.
- ✓ The ultimate goal of robotic surgery is to make all surgeries possible with a single incision.





*Thank you for your attention.*

