Updates in Cervical Cancer

Valerie Galvan Turner, MD
Assistant Professor Gynecologic Oncology
Gynecologic Oncology Director of Clinical Research
West Virginia University

WVUMedicine

Disclosures

- AstraZeneca-Merck Ovarian Cancer Advisory Board
- Tesaro Inc. Gemstone Expert Consultant
- Caris Precision Oncology Alliance (POA) WVU

Objectives

- Review pathophysiology of cervical cancer
- Review the history of and current treatments for cervical cancer
- Review FIGO 2018 Staging Updates
- Review new recommendations for the role of minimally invasive surgery in the treatment of cervical cancer

Myth

- Women in the United States no longer die from cervical cancer

WVUMedicine

Fact

United States:

- About **4,250** women will die from cervical cancer (2019)
- About **13,170** new cases of invasive cervical cancer will be diagnosed (2019)

Worldwide:

- **528K** new cases per year (2018)
- **Fourth** most common cancer

WVUMedicine

Globocan. http://globocan.iarc.fr/old/FactSheets/cancers/cervix-new.asp.
ACS (2018) http://www.cancer.org/cancer/cervical-cancer/about/key-statistics.html

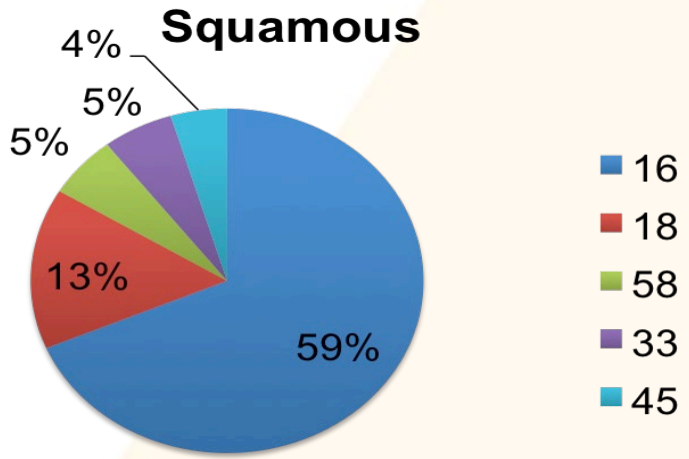
Risk Factors for Cervical Cancer

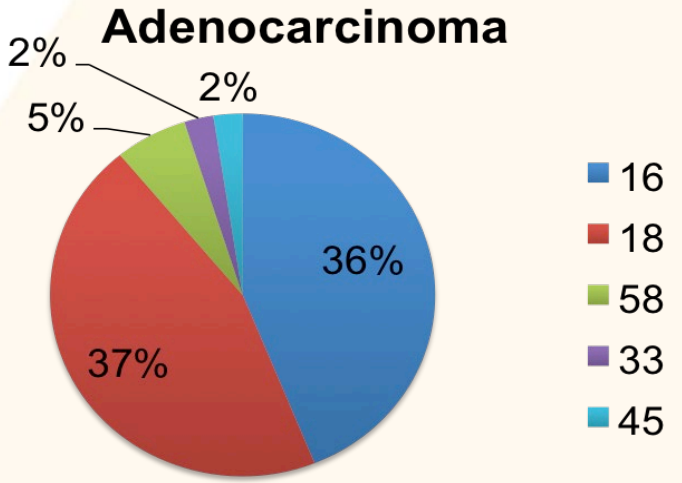
- Increasing Age
- HPV infection
- Immunosuppression
- Lower SES
- Multiple Partners
- Early Age Sexual Activity
- Tobacco Use
- History of VIN or VAIN
- Exposure to DES
- Infrequent or No Prior Screening*

IARC Monogr Eval Carcinog Risks Hum 100 (Pt B). 2012. p. 255-313.

HPV Subtypes

- High risk:
  - 16 and 18 most commonly associated with cancer
  - 18 more common in adenocarcinoma
  - HPV is detected in 99.7% of all cervical cancers
- Low Risk:
  - 6 and 11 associated with genital warts
  - 42, 43, 44

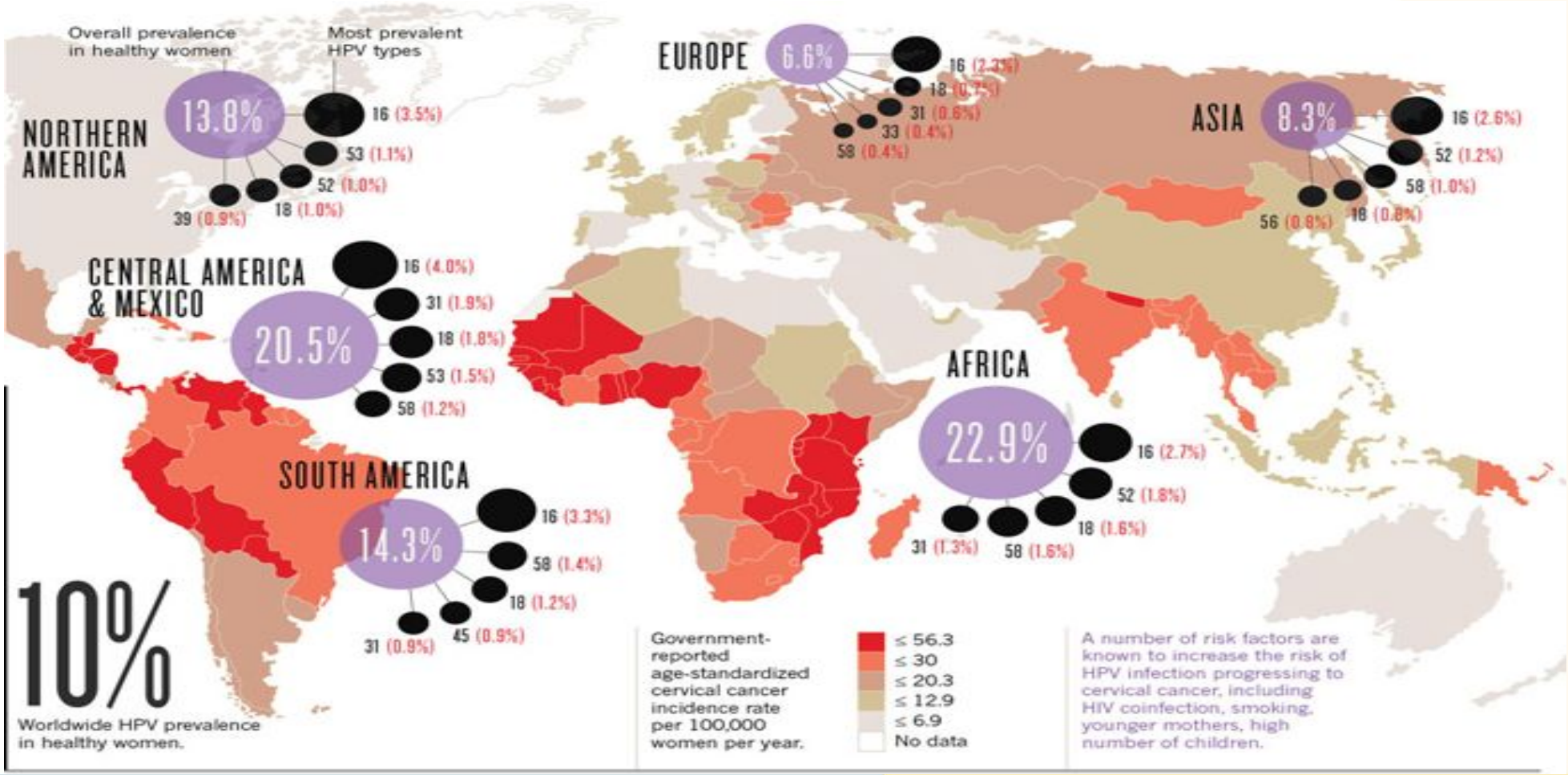




WVUMedicine

Bosch, FX et al. Vaccine, 2008. **26 Suppl 10**: p. K1-16.
Walboomers JM et al. J Pathol, 1999. **189**(1): p. 12-9.
Li, N. et al. Int J Cancer, 2011. **128**(4): p. 927-35.

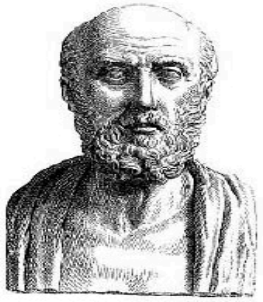
HPV Incidence



WVUMedicine

Crow, J. HPV: The Global Burden. Nature, 29 August 2012, 488.

History



First description of cervical cancer by Hippocrates

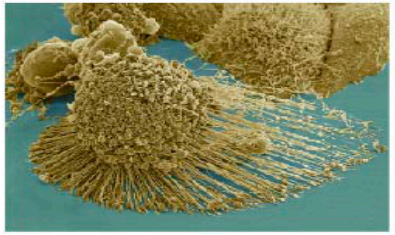
Cervix cancer identified as STD

Wertheim describes radical hysterectomy for treatment of cervical cancer

Papanikolaou develops cervical cytology smear

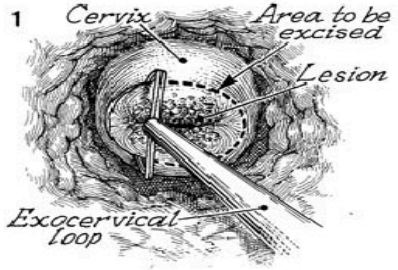
Pap test generalized as a procedure

Joe Meigs performs radical hysterectomy at Harvard University



Hela cell line derived from biopsy of cervical CA

Single Agent cisplatin established as chemotherapy back bone for treatment of metastatic/advanced cervical cancer



LEEP first described

400 BC | 1834 | 1898 | 1928 | 1943 | 1944 | 1951 | 1985 | 1989

DISCOVERY

CYTOTOXIC THERAPY

FURTHER STUDY

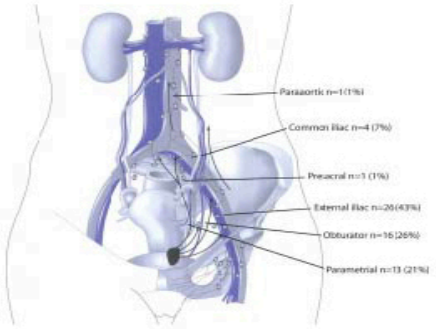
History

liquid pap developed

1996

Three large randomized prospective trials established chemoradiation as the treatment of choice for patients with advanced stage cervix cancer

1999

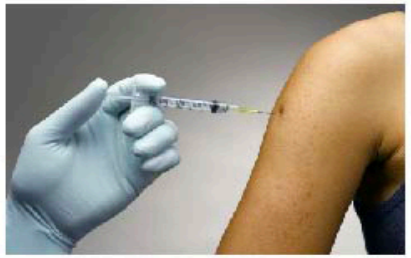


(Pargent et.al describes) Sentinal Lymph node mapping for cervix cancer

2000

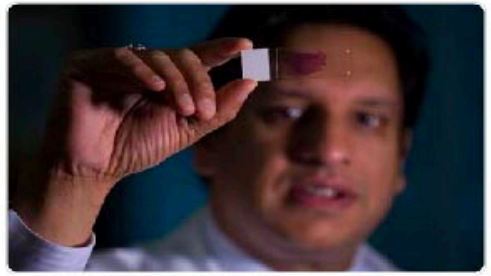
Medicare approves use of PET/CT for cervix cancer

2005



FDA approves first HPV vaccine

2006



Bevacizumab (Tewari et.al showed addition of Bevazumab for treatment of cervical cancer improved PFS)

2013

Pembrolizumab (Frenal et.al showed use of Pembrolizumab in patients with PD6-1 positive advanced cervical cancer had bad ORR 17%) Approved for use in patients with MSI-H/dMMR biomarkers

2017

SCREENING, IMAGING & VACCINES

TARGETED THERAPIES

FIGO Staging and Prognosis

Stage	Description
I	The carcinoma is strictly confined to the cervix (extension to the uterine corpus should be disregarded)
IA	Invasive carcinoma that can be diagnosed only by microscopy, with maximum depth of invasion <5 mm*
IA1	Measured stromal invasion <3 mm in depth
IA2	Measured stromal invasion ≥3 mm and <5 mm in depth
IB	Invasive carcinoma with measured deepest invasion ≥5 mm (greater than Stage IA), lesion limited to the cervix uteri¶
IB1	Invasive carcinoma ≥5 mm depth of stromal invasion, and <2 cm in greatest dimension
IB2	Invasive carcinoma ≥2 cm and <4 cm in greatest dimension
IB3	Invasive carcinoma ≥4 cm in greatest dimension
II	The carcinoma invades beyond the uterus, but has not extended onto the lower third of the vagina or to the pelvic wall
IIA	Involvement limited to the upper two-thirds of the vagina without parametrial involvement
IIA1	Invasive carcinoma <4 cm in greatest dimension
IIA2	Invasive carcinoma ≥4 cm in greatest dimension
IIB	With parametrial involvement but not up to the pelvic wall
III	The carcinoma involves the lower third of the vagina and/or extends to the pelvic wall and/or causes hydronephrosis or nonfunctioning kidney and/or involves pelvic and/or para-aortic lymph nodes[Δ]
IIIA	The carcinoma involves the lower third of the vagina, with no extension to the pelvic wall
IIIB	Extension to the pelvic wall and/or hydronephrosis or nonfunctioning kidney (unless known to be due to another cause)
IIIC	Involvement of pelvic and/or para-aortic lymph nodes, irrespective of tumor size and extent (with r and p notations)[Δ]
IIIC1	Pelvic lymph node metastasis only
IIIC2	Para-aortic lymph node metastasis
IV	The carcinoma has extended beyond the true pelvis or has involved (biopsy proven) the mucosa of the bladder or rectum. (A bullous edema, as such, does not permit a case to be allotted to Stage IV.)
IVA	Spread to adjacent pelvic organs
IVB	Spread to distant organs

FIGO	5 year OS
IA	93%
IB	80%
IIA	63%
IIB	58%
IIIA	35%
IIIB	32%
IVA	16%
IVB	15%

WVUMedicine

Staging of Gynecologic Malignancies Handbook, Society of Gynecologic Oncology, Editor. 2014.
ACS: Survival rates for cervical cancer. 2018 http://www.cancer.org/about-us/online-help/contact-us.html.

Factors Associated with Poor Prognosis

- Factors associated with poor prognosis (stage IB)
  - LVSI, Tumor Size, Depth of Stromal Invasion
- Factors associated with poor prognosis in more advanced (stage II,III,IV)
  - Para-aortic and pelvic lymph node status
  - Tumor size, age, PFS, Bilateral disease, clinical stage

Delgado, G., et al., Gynecol Oncol, 1990. **38**(3): p. 352-7.
Zaino, R.J., et al., Cancer, 1992. **69**(7): p. 1750-8.
Stehman, F.B., et al., Cancer, 1991. **67**(11): p. 2776-85.

Adenocarcinoma

- SEER based analysis of adenocarcinoma
  - Younger age, higher stage
  - Increased risk of death compared to SCC
    - Stage IB1-IIA (HR=1.39; 95% CI, 1.23-1.56)
    - Stage IIB-IVA (HR=1.21; 95% CI, 1.10-1.32)
- Adenosquamous may also be more aggressive

Galic, V., et al.. Gynecol Oncol, 2012. **125**(2): p. 287-91.

Overview

- Microinvasive
- Early Stage
  - Surgery vs Radiation
- Adjuvant Therapy
  - Intermediate Risk
  - High Risk
- Locally Advanced
  - Chemoradiation +/- Surgery
  - Neoadjuvant Approach
- Advanced and Recurrent Disease
- Targeted Therapeutics

Early Stage Disease: Surgery or RT

WVUMedicine

Surgery vs. Radiation

- Surgery:
  - Ovarian preservation
  - Smaller tumor
  - Select those likely to avoid postop RT
- Radiation
  - Consider oophoropexy
  - Non operative candidate
  - Consider compliance

Stage	Treatment Recommendation
Microinvasive Disease (IA1, IA2)	CKC +/- lymph node assessment, radical trachelectomy, simple hysterectomy (1A1), modified radical hysterectomy
Invasive Disease (IB1, IB2, IIA1)	modified radical hysterectomy + lymph nodes, radical hysterectomy + lymph nodes, radical trachelectomy +lymph nodes (IA2-IB1)
Invasive Disease (IB3, IIA2 and above)	Concurrent platinum-based chemoradiation (CCRT)
Advanced Disease (IVB)	Platinum doublet chemotherapy, CCRT*
Recurrent Disease	Platinum doublet chemotherapy with bevacizumab*, immunotherapy

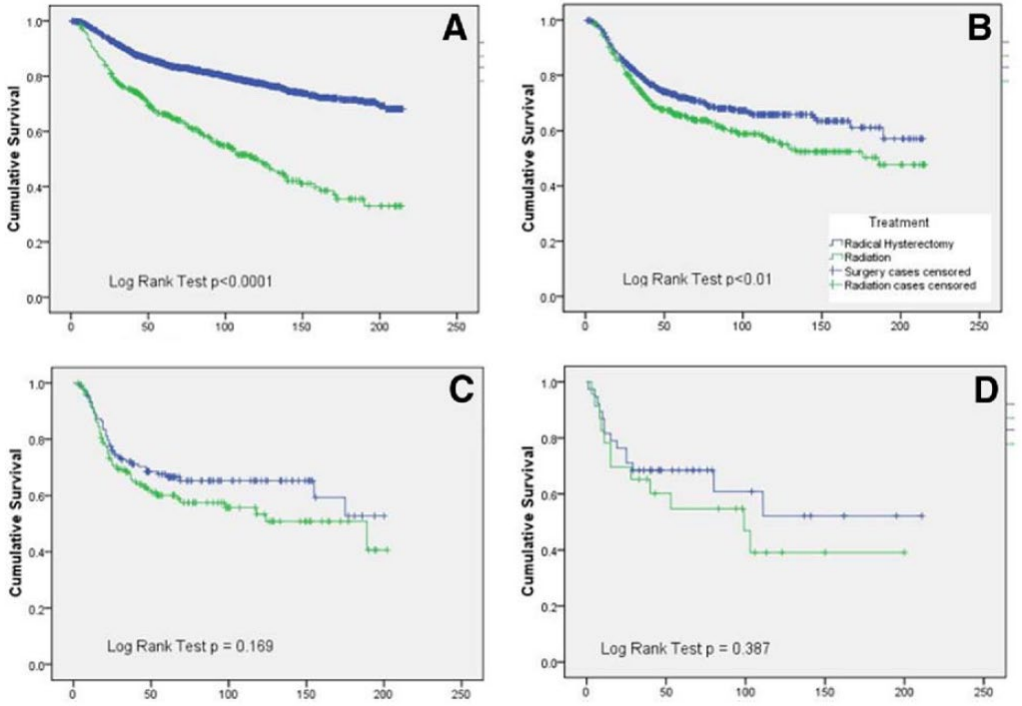
Bulky Stage IB and IIA: Treatment

- 3 different modalities, how do we sequence them?
  - Surgery Alone
  - (Chemo-)Radiation Alone
  - Surgery + (Chemo-)Radiation
  - *Chemoradiation* + *Surgery*
  - *Chemotherapy* + *Surgery*
  - *Chemotherapy* + *Surgery* + *Radiation*
- Consider:
  - Can you avoid RT?
  - Primary RT/chemo vs surgery +adjuvant RT-chemo and lower total dose, impact on sexual function and other toxicity?
  - Compliance for RT?
  - Residual tumor?
  - Higher risk path factors?

SEER analysis of Rad Hyst v RT

- Stage IB1-IIA (4,012 surgery, 873 XRT)
- Rad Hyst improved OS (HR0.41, CI 0.35-0.50)
- Tumors <4 cm (HR 0.38 (CI: 0.30-0.48)
- Tumors 4-6 cm (HR 0.51 (CI: 0.36-0.72)
- Tumors >6 cm survival was equivalent
- Nonrandomized, complications not available
- 49% of Rad Hyst patients received XRT, unknown if chemo also
- Path review not available, so unable to stratify by DOI, LVSI, etc.

FIGURE 2
Tumor size



Kaplan-Meier analysis of patients who were treated by radical hysterectomy (*blue*) vs radiation (*green*) stratified by tumor size: **A,** <4 cm, **B,** 4-6 cm, **C,** 6.1-8 cm, and **D,** >8 cm.

WVUMedicine

Bansal, et. et., Am J Obstet Gynecol. 2009 Nov;201(5):485.e1-9.

Early stage:
Intermediate Disease

“Sedlis” GOG 92: Early Stage Intermediate Risk

Stage IB Rad hyst PLND (node neg) randomized to EBRT vs. Observation with:

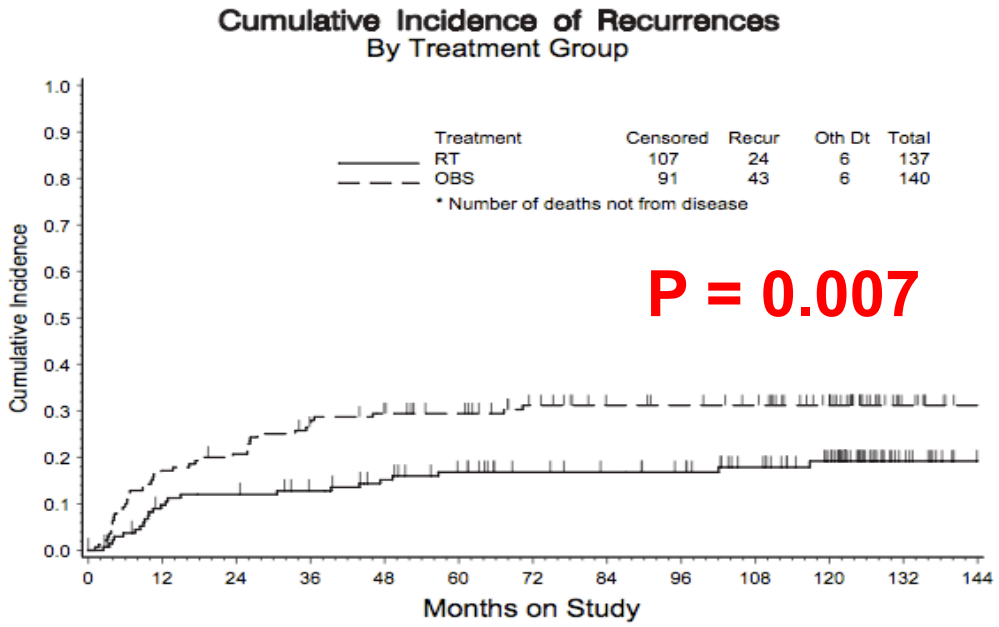
LVSI	Stromal Invasion	Tumor Size	Patients
+	Deep 1/3	Any	128 (46%)
+	Middle 1/3	≥ 2 cm	65 (23%)
+	Superficial 1/3	≥ 5 cm	2 (0.7%)
-	Deep or Mid 1/3	≥ 4cm	82 (30%)

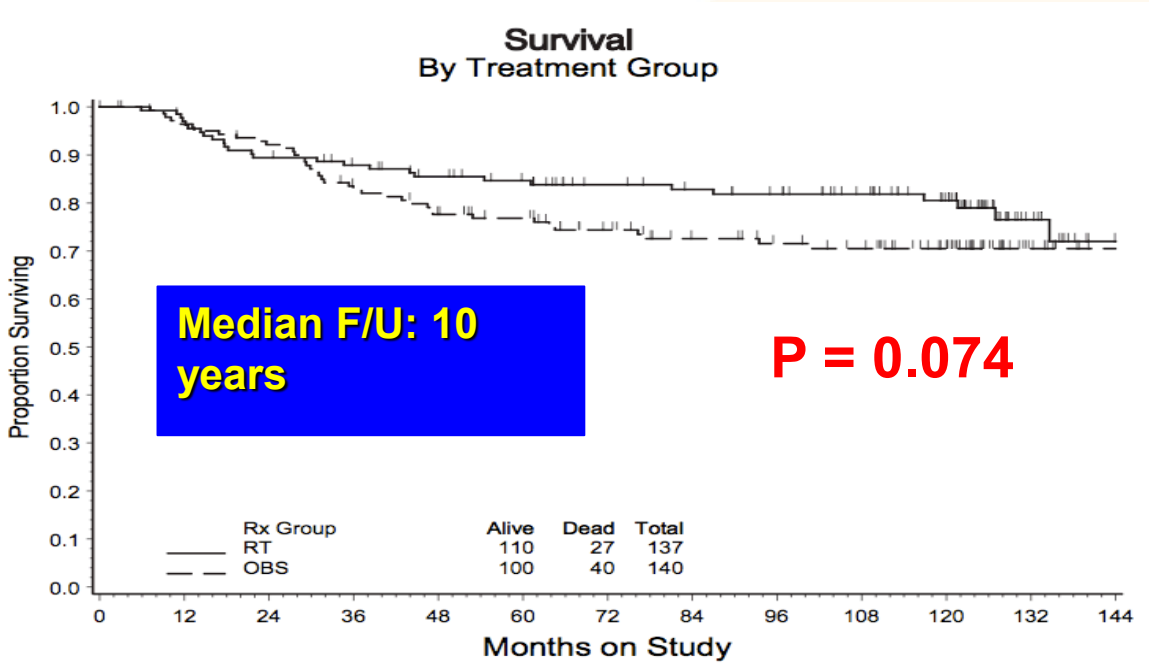
2 yr RFI: 88% vs 79%. RR = 0.53 , p = 0.008

OS close to significance
Study powered to detect 46% difference in OS (26-30% reduction in study)

Sedlis A. et al. Gynecol Oncol. 1999 May;73(2):177-83.

“Sedlis” GOG 92: Early Stage Intermediate Risk





WVUMedicine

Sedlis A. et al. Gynecol Oncol. 1999 May;73(2):177-83.

GOG 263 High Risk Early Stage

- Phase III Adjuvant EBRT vs RT-Chemo
- IA2-IIA s/p rad hyst PLND with intermediate risk factors
- Randomized to RT vs RT-Chemo
  - RT: EBRT or IMRT (28 fractions)
  - Chemo: Cisplatin 40mg/m2 weekly, up to 6 weeks

High Risk Early Stage

GOG 109 High Risk Early Stage

- (1991-96) Randomized, 268 patients. Post-operative clinical stage IA2, IB, and IIA, s/p radical hysterectomy and pelvic lymphadenectomy, with *high risk features*.
- Randomized to RT vs RT+CT.
- Conclusion: Addition of cisplatin based chemotherapy to RT significantly improves progression free survival and overall survival following surgery for high-risk, early stage patients

RTOG 0724 High Risk Early Stage

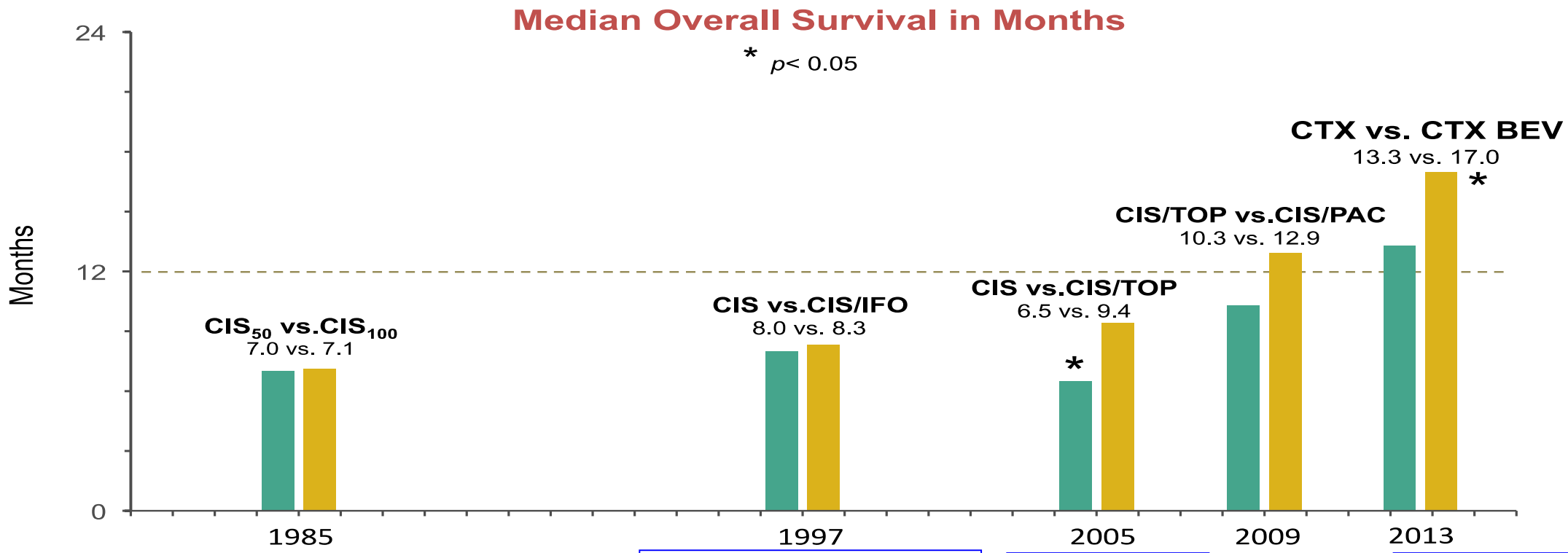
- GOG 109-R also known at RTOG 724

- Randomized to RT-Chemo vs RT-Chemo followed by adjuvant chemo
  - RT: EBRT or IMRT (28 fractions)
  - Chemo: weekly cisplatin up to 6 weeks +/- Carbo/Taxol x 4 cycles

Advanced/Recurrent Disease

Chemotherapy in Advanced Cervical Cancer

Phase III Studies



GOG 43
Better response high dose CIS 21% vs 30%

GOG 110
Better RR 33 vs 19%, and PFS 4.6 v 3.2 mo,
No diff OS

GOG 179
Sig improved RR, PRF, OS

GOG 204

GOG 240
Better response with bev.

Advanced Disease: IIB-IV

- General principles
  - Radiation is the mainstay treatment
  - Adding platinum can eradicate micrometastasis and acts as a radiation sensitizer
  - Chemo-radiation is superior to radiation alone

Immunotherapy and Cervical Cancer

WVU Medicine

Pembrolizumab for MSI-H/dMMR

- May 2017
- First drug approved by the FDA for having a biomarker (MSI-H or dMMR) for solid tumor
- Indications: adult or pediatric patient with solid tumor that have progressed following prior treatment and who have no satisfactory alternative treatment options
- Based on n=149 (multiple tumor types) across 5 trials*, 39.6% had complete or partial response. Of these, 78% had durable response >=6 mo.
- Beware of immune-mediated side effects

* Trials included
Keynote-016
Keynote-164
Keynote-012
Keynote-028
Keynote-158

Summary Advanced/Recurrent Cervix

- Taxane/Platin combination is preferred
- Bevacizumab provides additional survival advantage
- Limited efficacy of other single agent drugs
- Consider pembrolizumab if tumor MSI-H or dMMR. Future trials for checkpoint inhibitors in progress without requirement of MSI-H/dMMR.


GNORE
ME

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Minimally Invasive versus Abdominal Radical Hysterectomy for Cervical Cancer

Pedro T. Ramirez, M.D., Michael Frumovitz, M.D., Rene Pareja, M.D., Aldo Lopez, M.D., Marcelo Vieira, M.D., Reitan Ribeiro, M.D., Alessandro Buda, M.D., Xiaojian Yan, M.D., Yao Shuzhong, M.D., Naven Chetty, M.D., David Isla, M.D., Mariano Tamura, M.D., Tao Zhu, M.D., Kristy P. Robledo, Ph.D., Val Gebski, M.Stat., Rebecca Asher, M.Sc., Vanessa Behan, B.S.N., James L. Nicklin, M.D., Robert L. Coleman, M.D., and Andreas Obermair, M.D.

THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
Making Cancer History®

WVU Medicine

LACC Trial

The NEW ENGLAND JOURNAL of MEDICINE

Primary Objective
LACC Trial

Compare **disease-free survival at 4.5 years** amongst patients who underwent a total **laparoscopic or robotic radical hysterectomy (MIS)** vs. a **total abdominal radical hysterectomy (open)** for early stage cervical cancer.

LACC Trial

Study Schema

The NEW ENGLAND JOURNAL of MEDICINE

Open: June 2008
Accrual: 631
Closed: June 2017*

Stage IA1 LVSI, IA2, IB1 Squamous, Adenocarcinoma, or Adenosquamous Cervical Cancer

RANDOMIZE

- Total Abdominal Radical Hysterectomy — N= 312
- Total Laparoscopic/Robotic Radical Hysterectomy — N= 319

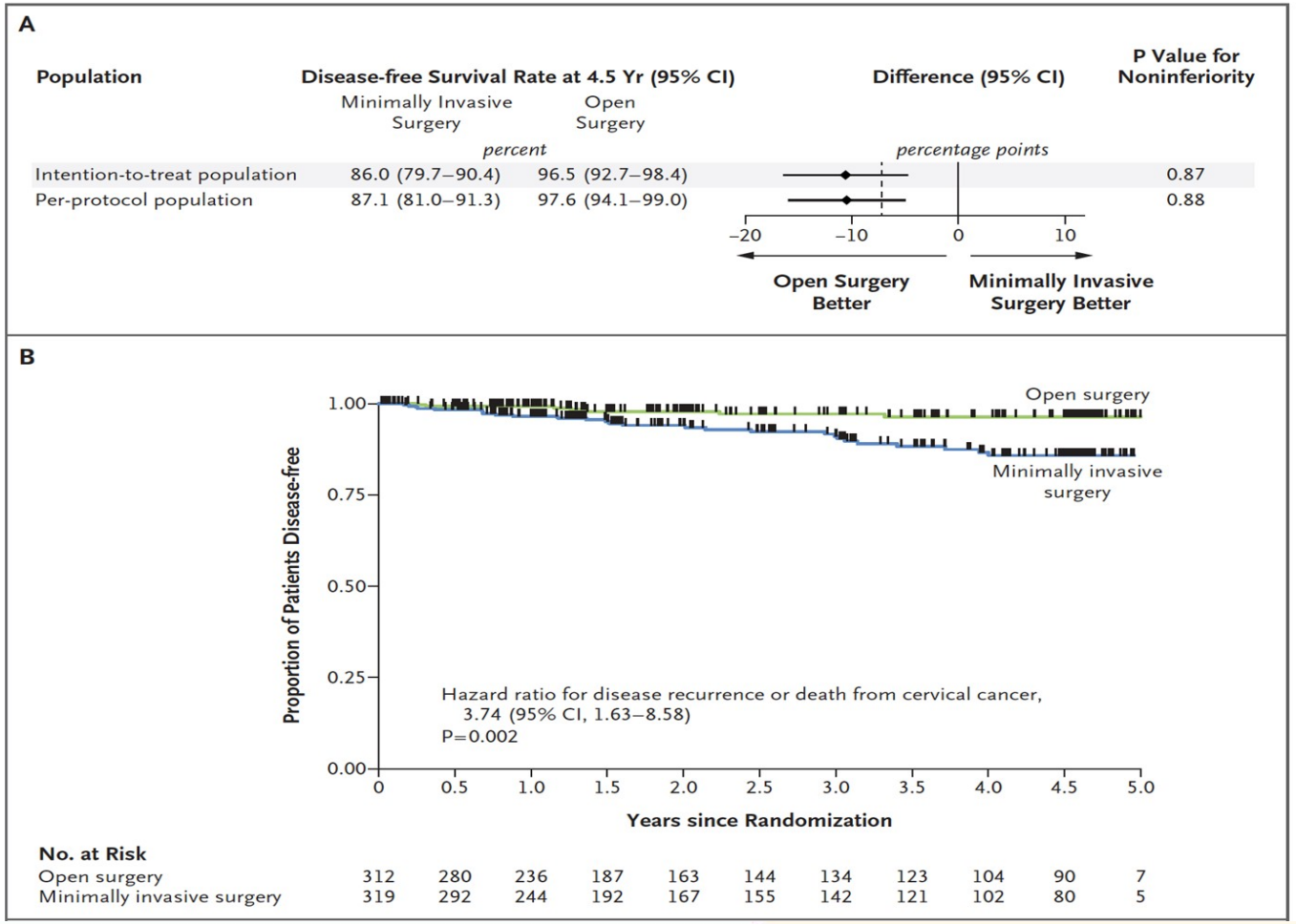
*Recommendation of study termination by DSMC

LACC Trial

Surgery by Randomized Treatment

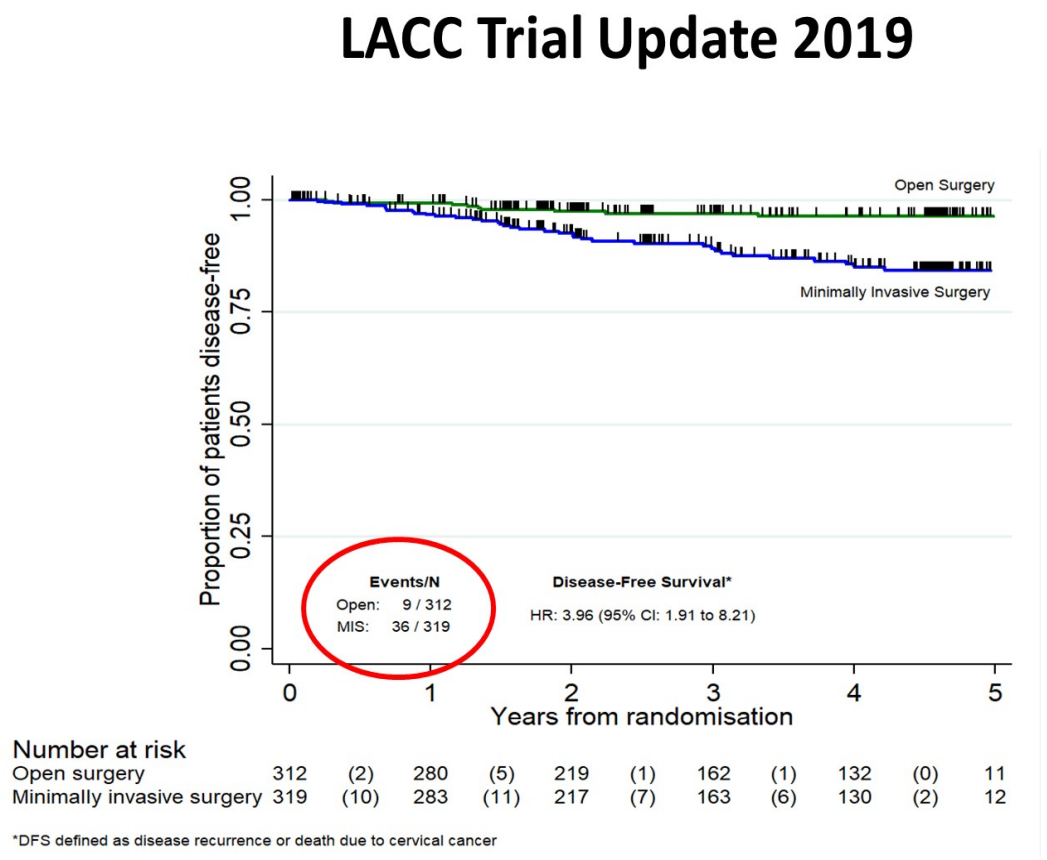
	Open	MIS
Randomized patients	312	319
• Open	274 (88%)	2 (1%)
• MIS	8 (3%)	289 (91%)
• Withdrawn prior to surgery	19 (6%)	12 (4%)
• Surgery abandoned	11 (4%)	16 (5%)
• Lost to follow-up	18 (6%)	14 (4%)
Surgery performed as randomized	274 (88%)	289 (91%)
Method of MIS	N=8	N=289
• Laparoscopic	7 (88%)	244 (84%)
• Robotic	1 (13%)	45 (16%)
MIS converted to Laparotomy	1 (0.3%)	10 (3%)

LACC Trial

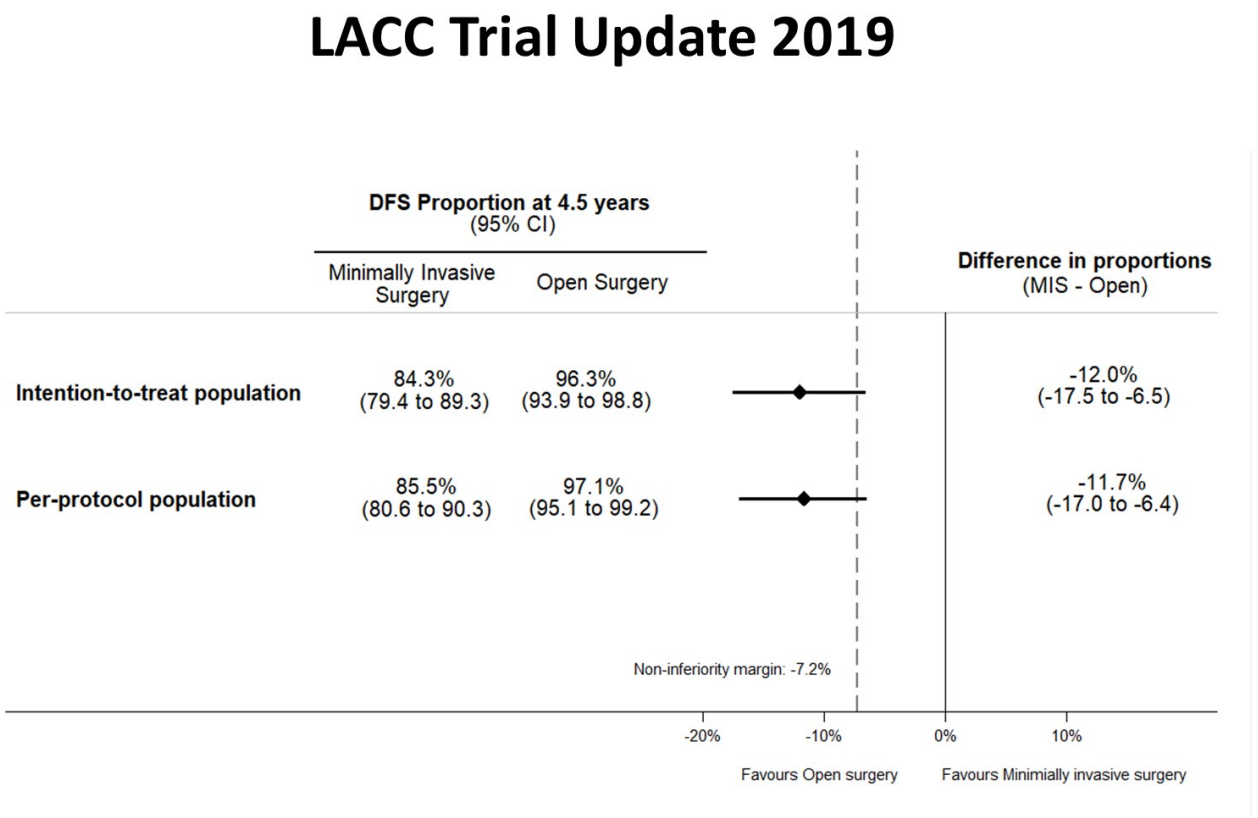


WVUMedicine

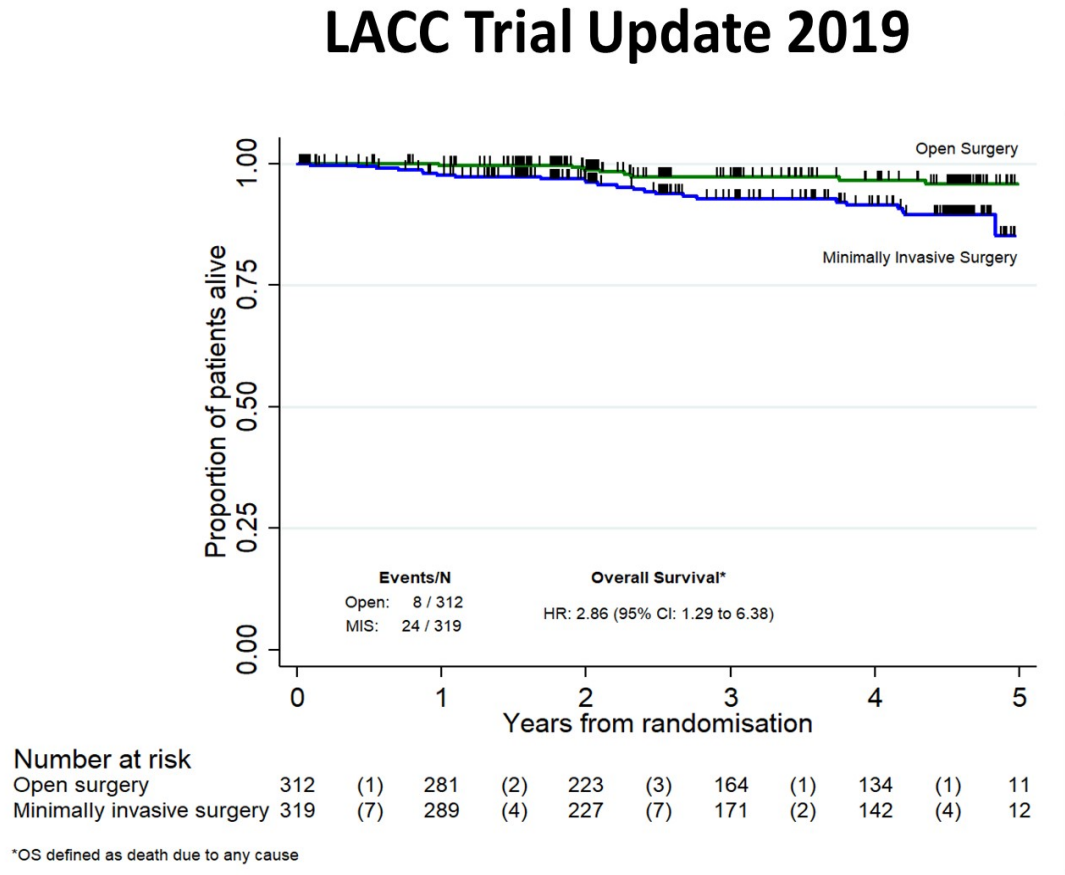
LACC Trial


LACC Trial Update 2019
Open Surgery
Minimally Invasive Surgery
Proportion of patients disease-free
0.00
0.25
0.50
0.75
1.00
Events/N
Open: 9 / 312
MIS: 36 / 319
Disease-Free Survival*
HR: 3.96 (95% CI: 1.91 to 8.21)
0
1
2
3
4
5
Years from randomisation
Number at risk
Open surgery 312 (2) 280 (5) 219 (1) 162 (1) 132 (0) 11
Minimally invasive surgery 319 (10) 283 (11) 217 (7) 163 (6) 130 (2) 12
*DFS defined as disease recurrence or death due to cervical cancer

LACC Trial


LACC Trial Update 2019
DFS Proportion at 4.5 years
(95% CI)
Minimally Invasive Surgery
Open Surgery
Difference in proportions
(MIS - Open)
Intention-to-treat population
84.3%
(79.4 to 89.3)
96.3%
(93.9 to 98.8)
-12.0%
(-17.5 to -6.5)
Per-protocol population
85.5%
(80.6 to 90.3)
97.1%
(95.1 to 99.2)
-11.7%
(-17.0 to -6.4)
Non-inferiority margin: -7.2%
-20%
-10%
0%
10%
Favours Open surgery
Favours Minimially invasive surgery

LACC Trial


LACC Trial Update 2019
Open Surgery
Minimally Invasive Surgery
Proportion of patients alive
0.00
0.25
0.50
0.75
1.00
Events/N
Open: 8 / 312
MIS: 24 / 319
Overall Survival*
HR: 2.86 (95% CI: 1.29 to 6.38)
0
1
2
3
4
5
Years from randomisation
Number at risk
Open surgery 312 (1) 281 (2) 223 (3) 164 (1) 134 (1) 11
Minimally invasive surgery 319 (7) 289 (4) 227 (7) 171 (2) 142 (4) 12
*OS defined as death due to any cause

The NEW ENGLAND JOURNAL of MEDICINE

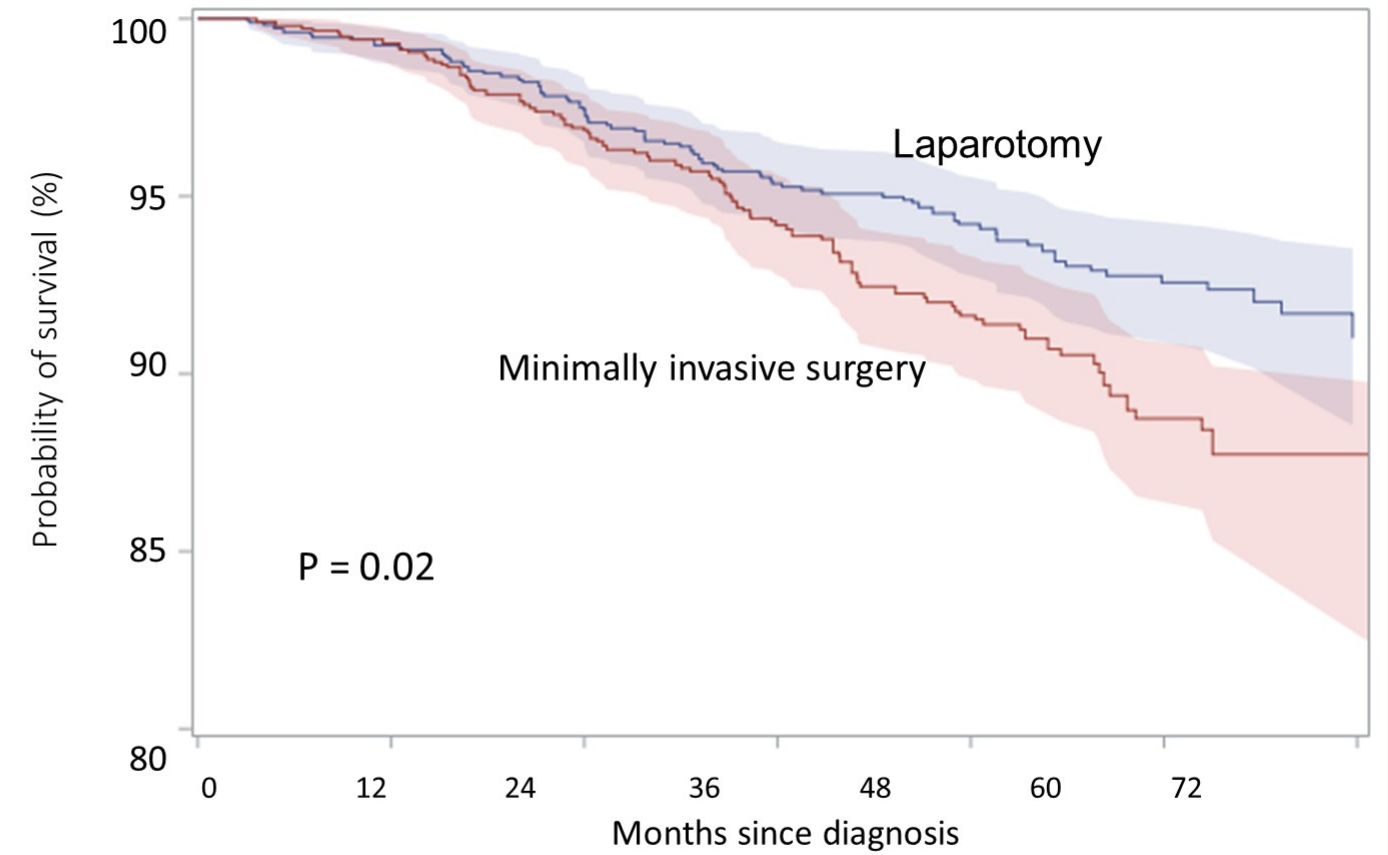
ORIGINAL ARTICLE

Survival after Minimally Invasive Radical Hysterectomy for Early-Stage Cervical Cancer

Alexander Melamed, M.D., M.P.H., Daniel J. Margul, M.D., Ph.D., Ling Chen, M.D, M.P.H., Nancy L. Keating, M.D., M.P.H., Marcela G. del Carmen, M.D., M.P.H., Junhua Yang, M.S., Brandon-Luke L. Seagle, M.D., Amy Alexander, M.D., Emma L. Barber, M.D., Laurel W. Rice, M.D., Jason D. Wright, M.D., Masha Kocherginsky, Ph.D., Shohreh Shahabi, M.D., E.M.H.A., and J. Alejandro Rauh-Hain, M.D., M.P.H.

MIS **48% higher hazard of death** from any cause compared with laparotomy (HR 1.48; 95% CI 1.10-1.98)

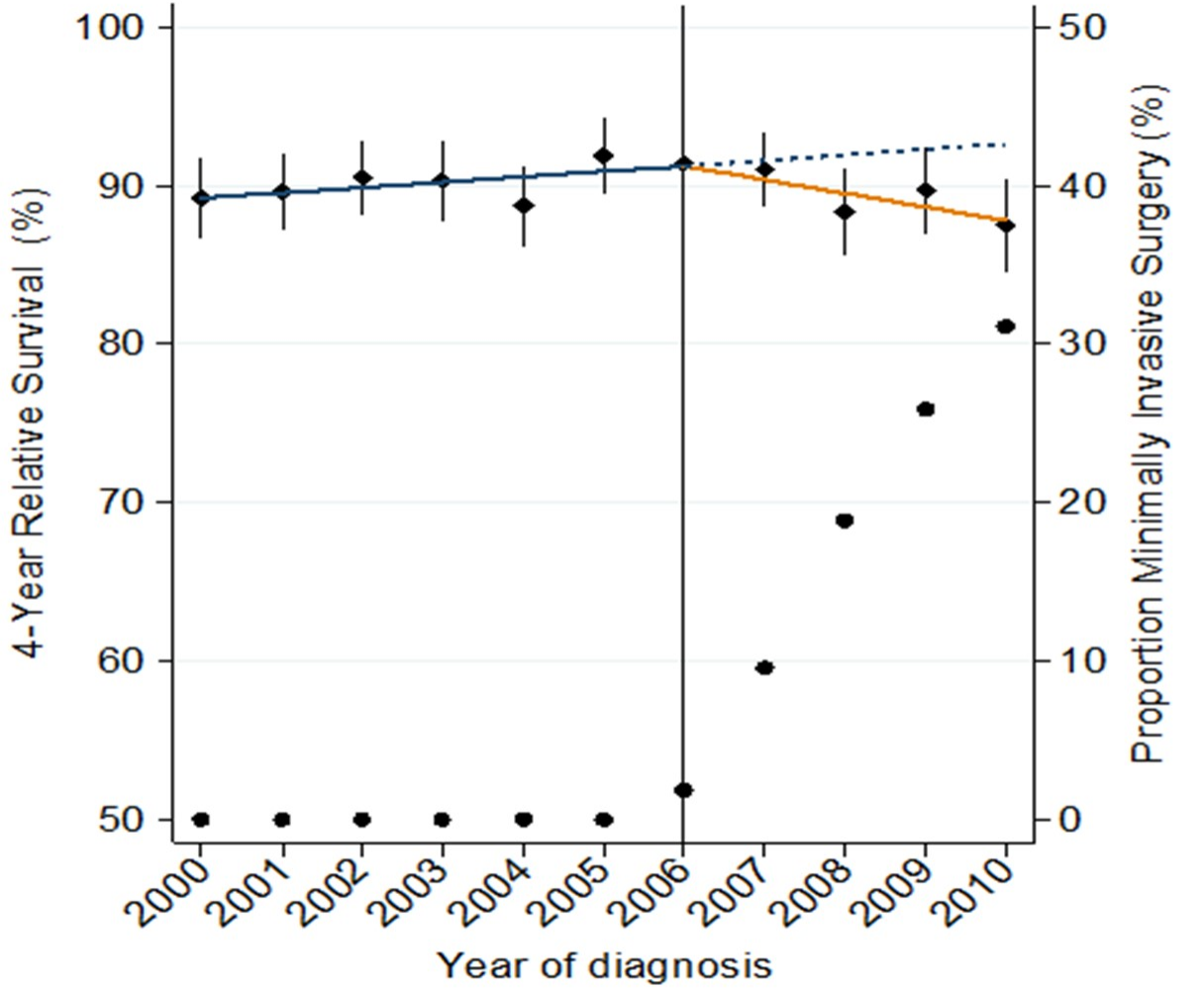
Adjusted probability of death within 4-years:
MIS (8.4%) vs. Open (5.8%)



Open	1,166	1,116	1,051	953	728	410	118
MIS	1,055	1,005	940	834	586	257	76

Time Interrupted Series (SEER Data)

Adoption of MIS was associated with a significant change of temporal trend, with **4-year survival declining by 1.0%** (95%CI 0.3-1.6 per year annually after 2006)




J Gynecol Oncol. 2018 Jul;29(4):e73
https://doi.org/10.3802/jgo.2018.29.e73
pISSN 2005-0380-eISSN 2005-0399

Expert Opinion

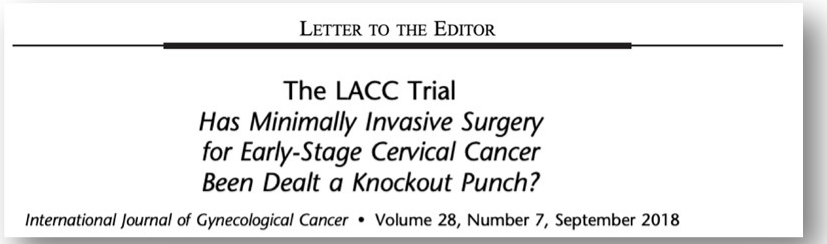
Check for updates

Unexpected result of minimally invasive surgery for cervical cancer

Hiroyuki Kanao, Yoichi Aoki, Nobuhiro Takeshima

Department of Gynecologic Oncology, Cancer Institute Hospital, Tokyo, Japan

OPEN ACCESS


LETTER TO THE EDITOR

The LACC Trial *Has Minimally Invasive Surgery for Early-Stage Cervical Cancer Been Dealt a Knockout Punch?*

International Journal of Gynecological Cancer • Volume 28, Number 7, September 2018


J Gynecol Oncol. 2018 Jul;29(4):e74
https://doi.org/10.3802/jgo.2018.29.e74
pISSN 2005-0380-eISSN 2005-0399

Expert Opinion

Check for updates

How should gynecologic oncologists react to the unexpected results of LACC trial?

Jeong-Yeol Park, Joo-Hyun Nam

Department of Obstetrics and Gynecology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

OPEN ACCESS


GebFra Science | Statement

Thieme

Comment on the LACC Trial Investigating Early-stage Cervical Cancer by the Uterus Commission of the Study Group for Gynecologic Oncology (AGO) and the Study Group for Gynecologic Endoscopy (AGE) of the German Society for Gynecology and Obstetrics (DGGG)

Stellungnahme zur LACC-Studie bei frühem Zervixkarzinom der Kommission Uterus der Arbeitsgemeinschaft Gynäkologische Onkologie (AGO) und der Arbeitsgemeinschaft Gynäkologische Endoskopie (AGE) der Deutschen Gesellschaft für Gynäkologie und Geburtshilfe (DGGG)


J Gynecol Oncol. 2018 Jul;29(4):e75
https://doi.org/10.3802/jgo.2018.29.e75
pISSN 2005-0380-eISSN 2005-0399

Expert Opinion

Check for updates

Minimally invasive surgery for cervical cancer: consequences for treatment after LACC Study

Rainer Kimmig,[1] Thomas Ind[2,3]

[1]Department of Obstetrics and Gynaecology, West German Cancer Center, University Hospital of Essen, Essen, Germany
[2]Department of Gynaecological Oncology, Royal Marsden Hospital, London, UK
[3]St. George's University of London, London, UK

OPEN ACCESS


ELSEVIER

Check for updates

Editorial

Minimally Invasive Radical Hysterectomy Has Many Benefits Compared with Open Radical Hysterectomy: Will the LACC Trial Cause the Premature Demise of This Procedure?

JMIG The Journal of Minimally Invasive Gynecology


J Gynecol Oncol. 2019 Mar;30(2):e43
https://doi.org/10.3802/jgo.2019.30.e43
pISSN 2005-0380-eISSN 2005-0399

Correspondence

Check for updates

Rethinking the next step after unexpected results associated with minimally invasive radical hysterectomy for early cervical cancer

Seung Yeon Pyeon,[1,2] Yun Jung Hur,[2] Jong-Min Lee[1]

WVUMedicine

Presented By Pedro Ramirez at 2019 ASCO Annual Meeting

Studies Warn Against Minimally Invasive Surgery for Cervical Cancer
The New York Times
"At M.D. Anderson, we have completely stopped performing minimally invasive surgery for cervical cancer," said Dr. Pedro T. Ramirez, a leading expert in minimally invasive surgery for gynecologic cancers, and the lead author of one study. "Throughout the gynecologic oncology community, we're seeing a transition back to the predominance of open surgery."
link

Minimally Invasive Surgery Is Standard for Cervical Cancer. But A New Study Shows It's Not Effective
TIME
"We learned that people in the minimally invasive surgery arm had a four times higher likelihood of having a recurrence and of potentially dying than with the approach [after four to five ye Pedro Ramirez, director of mi surgery at MD Anderson and one of the studies.
link

More deaths seen for less invasive cervical cancer surgery
Associated Press (appeared in over 250 additional outlets)
"We immediately as a department changed our practice and changed completely to the open approach," said Dr. Pedro Ramirez of the University of Texas MD Anderson Cancer Center in Houston.
link

Keyhole surgery may be riskier for cervical cancer, studies find
NBC News
The results were so startling that the University of Texas MD Anderson Cancer Center has stopped offering minimally invasive surgery for most women with early stage cervical cancer, and several of the researchers at other institutions said they were advising their patients to opt for more invasive surgery.
link

In cervical cancer surgery, minimally invasive is worse than open, study says
CNN
Small studies of minimally invasive radical hysterectomy had "shown that it was safe," though most "just focused on what happened in the short term," explained Dr. Jose Alejandro Rauh-Hain, senior author of one of the new studies and an assistant professor of gynecologic oncology and reproductive medicine at the University of Texas MD Anderson Cancer Center in Houston.
link

For Cervical Cancer Patients, Less Invasive Surgery Is Worse For Survival
NPR
"Patients who underwent the minimally invasive surgery had four times greater likelihood of [cancer] recurrence than when they had the surgery through the open approach," says Dr. Pedro Ramirez at the MD Anderson Cancer Center in Houston.
link

Minimally invasive surgery for cervical cancer may cause it to return
NBC Nightly News
Two major studies in the New England Journal of Medicine find a minimally invasive surgery for early-stage cervical cancer nearly doubles the risk of death compared to traditional surgery.
link

Less-radical surgery may pose higher death risk in early cervical cancer
Reuters
"You have a four-times greater likelihood of recurrence" with the less-invasive technique, whether or not a robot is used in the operation, said Dr. Pedro Ramirez of the University of Texas MD Anderson Cancer Center in Houston, who led a randomized comparison of the procedures published in the New England Journal of Medicine.
link

HEALTHNEWSREVIEW.ORG
IMPROVING YOUR CRITICAL THINKING ABOUT HEALTH CARE

Minimally invasive surgery may not be best treatment for cervical cancer, studies show
ABC News Radio
It's believed that minimally invasive surgery using laparoscopy or robotic assisted surgery can decrease recovery time in the hospital and post-operative complications. However, at the University of Texas MD Anderson Cancer Center, two studies found that women with early stage cervical cancer actually had worse outcomes after a minimally invasive radical hysterectomy than those who underwent a traditional open abdominal hysterectomy.
link

Less-Invasive Surgery for Cervical Cancer May Bring More Risks, Studies Find
HealthDay
"Minimally invasive surgery was adopted as an alternative to open radical hysterectomy before high-quality evidence regarding its impact on survival was available," said Dr. Jose Alejandro Rauh-Hain of the University of Texas
MD Anderson Cancer Center in Houston, who helped lead the study.
link

Minimally invasive surgery for cervical cancer carries higher risk of recurrence and death, MD Anderson studies find
Houston Chronicle (page one)
"The takeaway is simple: stop doing minimally invasive surgery for radical hysterectomy," said Dr. Pedro Ramirez, an MD Anderson professor of gynecologic oncology and reproductive medicine and the primary investigator of one of the studies. "It results in more cancer than open surgery."
link

WVUMedicine

Presented By Pedro Ramirez at 2019 ASCO Annual Meeting

ESGO
European Society of Gynaecological Oncology

Explore Attend Network Join

Search myESGO Support ESGO

The European Voice of Gynaecological Oncology

Laparoscopic radical hysterectomy: An ESGO statement

LAPAROSCOPIC RADICAL HYSTERECTOMY: AN ESGO STATEMENT

Updated recommendation: Open approach is the gold standard

A randomised study by Ramirez et al. and an epidemiological study by Melamed et al. (1–2), found that the minimal invasive surgery approach for radical hysterectomy for cervical cancer is associated with shorter disease-free and overall survival than open surgery. These findings were confirmed in a recent population-based survey in England (3). In light of the results obtained by these studies, the ESGO Scientific Committee and Council herewith issue a statement that the current ESGO recommendation regarding the approach for radical surgery for cervical cancer ("Minimal invasive approach is favoured" (4)) is **no longer valid** and should be removed and replaced by "Open approach is the gold standard".

Summary of Updates

- 2017 Pembrolizumab first drug approved by the FDA for having a biomarker (MSI-H or dMMR) for solid tumor
- FIGO 2018 Staging includes advanced imaging and new stage IB3, IIIC1, IIIC2
- Surgical management no longer recommended for IB3 and IIA2
- Pelvic exenteration can still be offered but outcomes are poor
- Laparotomy should be standard of care for patients with greater than stage IA1 disease

THANK YOU.

Questions?