The 41st Meeting of the New England Association of Gynecologic Oncologists

Newport, Rhode Island

June 10-12, 2022

New England Association of Gynecologic Oncologists

Preamble

In Sturbridge, Massachusetts at the Public House on the Common, a group of physicians from the several states and commonwealths of Connecticut, Massachusetts, Maine, Rhode Island and Vermont were gathered in the afternoon of Saturday, the eighth day of March in the year A.D. nineteen hundred and eighty. These physicians proclaim their existence as gynecologic oncologists in order to advance the practice and science of gynecologic oncology in New England and agree that an organization for such a purpose should be formed and sustained.

It was decreed that this organization henceforth should be known as the New England Association of Gynecologic Oncologists.

It was agreed that invitations to membership should be extended to those who have distinguished themselves by their accomplishments and their extraordinary contributions to the practice and science of gynecologic oncology.

It was agreed that the purpose of the association was to improve patient care by: (1) Enhancing the exchange of medical knowledge among New England physicians treating patients with gynecologic malignancies. (2) Providing a forum for increased communication among gynecologic oncologists in New England which should foster collaborate studies. (3) Encouraging a feeling of camaraderie among gynecologic oncologists and others with common interests.

I hereby agree to the bylaws of this preamble and accordingly affix my signature on Saturday, October 18, 1980.

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Peter E. Schwartz, MD
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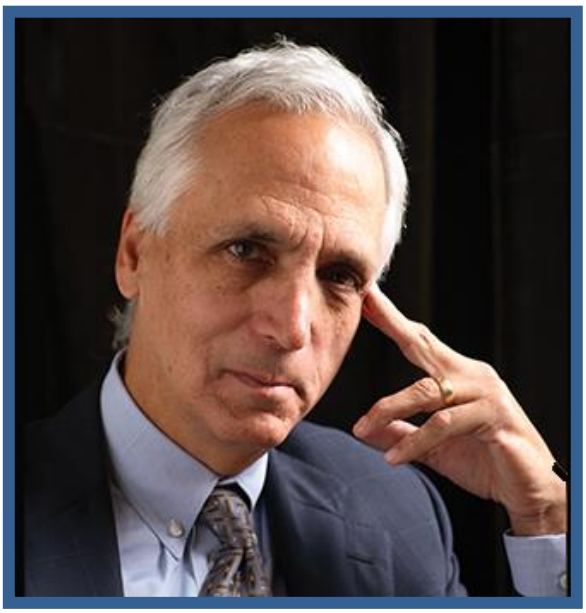
**Deceased Members*

The "Introspective Tumor Board" is being held in honor of Cornelius "Skip" Granai, MD.

Skip was an active NEAGO member and past president.

He will forever be an inspiration!



hard to say

We stand for Leslie, Ellie, Rita, Barbara, and all the others who trust us with their care. We know what this means; somehow, it's just hard to say.

Dedication to the best possible patient care is part. Timely, thoughtful, dignified evaluations, recommendations, and treatments are the important form, but not the essence of our work.

Individuals, now we come together as a staff in the hope of making a special difference. We try to support our patients day-to-day through the often remarkable things they face. We care about their pain and their families' pain. We are a medical, administrative team, or maybe at times even a family, who want to help with more than the physical needs.

We always seek to learn. Education and research are among our highest priorities. Forever students, on behalf of our patients, we study to stay at the forefront of medicine. We are also teachers, teaching others what we have learned and teaching them about our team approach.

Finally, we are honored by the patients who allow, want, us close-by at intimate moments. We are proud that despite our own great fears we do not shy away -- because in the end, we believe in the good of what we do. *Skip Granai - 1989*

The 41st Meeting of the New England Association of Gynecologic Oncologists

PAST NEAGO MEETINGS AND PRESIDENTS

YEAR	LOCATION	PRESIDENT
1980-1981	Treadway Inn, Newport, RI	Murray Joseph Casey, MD
1981-1982	Black Point Inn, Prouts Neck, ME	Charles R. Boyce, MD
1982-1983	Pleasant Bay, Chatham, MA	Henry C. McDuff, Jr., MD
1983-1984	Woodstock Inn, Woodstock, VT	Thomas Leavitt, MD
1984-1985	Trapp Family Lodge, Stowe, VT	Jerome Belinson, MD
1985-1986	New Seabury, Cape Cod, MA	C. Thomas Griffiths, MD
1986-1987	Inn by the Sea, Cape Elizabeth, ME	Charles L. Easterday, MD
1987-1988	The Hilton Inn, Mystic, CT	Stephen L. Curry, MD
1988-1989	Bar Harbor Inn, Bar Harbor, ME	Ernest I. Kohorn, MD
1989-1990	Sheraton Sturbridge Resort, Sturbridge, MA	Richard E. Hunter, MD
1990-1991	The Equinox, Manchester, VT	Robert C. Knapp, MD
1991-1992	Newport Islander, Newport, RI	John C. Lathrop, MD
1992-1993	Chatham Bars Inn, Chatham, MA	Peter E. Schwartz, MD
1993-1994	Harbor House, Nantucket, MA	Arlan F. Fuller, MD
1994-1995	The Williams Inn, Williamstown, MA	William J. Hewett, MD
1995-1996	The Cliff House, Ogunquit, ME	Harrison G. Ball, MD
1996-1997	Ocean Edge, Brewster, MA	Najmosama T. Nikrui, MD
1997-1998	The White Mountain Hotel, N. Conway, NH	Joseph T. Chambers, MD
1998-1999	The Westin, Providence, RI	C.O. Granai, MD
1999-2000	Cranwell Resort, Lenox, MA	Jonathan M. Niloff, MD
2000-2001	Topnotch Resort and Spa, Stowe, VT	Setsuko K. Chambers, MD
2001-2002	Harbor View Hotel, Martha's Vineyard, MA	James S. Hoffman, MD
2002-2003	Black Point Inn, Prouts Neck, ME	Hector M. Tarraza, MD
2003-2004	Chatham Bars Inn, Chatham, MA	Walter H. Gajewski, MD
2004-2005	Mt. Washington Resort, Bretton Woods, NH	Robert McLellan, MD
2005-2006	The Equinox, Manchester Village, VT	Michel Prefontaine, MD
2006-2007	The Colony Hotel, Kennebunkport, ME	Annekathryn Goodman, MD
2007-2008	The Wequassett Resort, Chatham, MA	Michael Muto, MD
2008-2009	Wentworth-by-the-Sea, New Castle, NH	Leslie DeMars, MD
2009-2010	Spruce Point Inn, Booth Bay Harbor, ME	Beth Nelson, MD
2010-2011	Stowe Mountain Lodge, Stowe, VT	Valena Soto-Wright, MD
2011-2012	Bar Harbor Regency, Bar Harbor, ME	Marcela del Carmen, MD
2012-2013	Water's Edge Resort & Spa, Westbrook, CT	John Schorge, MD
2013-2014	Hyatt Regency, Goat Island, Newport, RI	Richard G. Moore, MD
2014-2015	The Colony Hotel, Kennebunkport, ME	Susan Zweizig, MD
2015-2016	Ocean Edge, Brewster, MA	Colleen Feltmate, MD
2016-2017	The Hilton Mystic, Mystic, CT	Amy Brown, MD, MPH
2017-2018	The Cliff House, Cape Neddick, ME	Emmanuel Soultanakis MD
2018-2019	Omni Mount Washington, Bretton Woods, NH	Dave Boruta, MD
2019-2020	The Equinox, Manchester Village, VT *(Canceled due to pandemic.)*	Cheung Wong, MD
2020-2021	Held virtually *(Due to pandemic.)*	Cheung Wong, MD

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Past Award Winners

DIANNON PRIZE

(For the best paper presented by a trainee)

1922 Bjorn Bjornsson, MD
1993 Ricardo Saniz de la Cuesta, MD
1994 Iris Wertheim, MD
1995 Thomas Rutherford, MD
1996 Mitchell Edelson, MD
1997 Annette Chen, MD
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TRAINEE AWARD

1999 Karen Houck, MD
2000 Eugene P. Toy, MD
2001 Richard Moore, MD
2002 Robert DeBernardo, MD
2002 Tanja Pejovic, MD
2003 Laurent Brard, MD
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2004 Ami Vaidya, MD
2005 Michael J. Callahan, MD
2005 Viven Lee, MD
2006 Katina Robison, MD
2006 Michael Kelley, MD
2007 Eloise Chapman (Clinical)
2007 Emily M. Ko, MD (Clinical)
2007 Katina Robison, MD (Basic Science)
2007 Alexander Olawaiye, MD (Basic Science)
2008 Moune Jabre-Raughley, MD (Clinical)
2008 Leslie Garrett, MD (Basic Science)
2009 Jason Knight, MD (Clinical)
2009 Whitfield Growdon, MD (Basic Science)
2010 Megan Wright, MD (Clinical)
2010 Katrin Kristjansdottir, MD (Basic Science)
2011 Elizabeth Lokich, MD (Clinical)
2011 Leslie Bradford, MD (Basic Science)
2012 Jessica Hsieh, MD (Clinical)
2012 Rachel Clark, MD (Basic Science)
2013 Kevin Elias, MD (Basic Science)
2013 Emily Hill, MD (Basic Science)
2014 Amy Bregar, MD (Clinical)
2014 Elizabeth Lokich, MD (Basic Science)
2014 Carlton Schwab, MD (Basic Science)
2015 Jonathan Black, MD (Basic Science)
2015 Kevin Elias, MD (Basic Science)
2015 Katelyn Dorney, MD (Clinical)
2016 Jenna Emerson, MD (Clinical)
2016 Kevin Elias, MD (Basic Science)
2017 Roni Nitecki, MD (Clinical)
2017 Matthew Oliver, MD (Basic Science)
2018 Searching for Award Winner (Clinical)
2018 Lindsey Beffa, MD (Basic Science)
2019 Deanna Glassman (Clinical)
2019 Jenna Emerson (Basic Science)
2020 No awards given (Meeting canceled)
2021 No awards given (Virtual; no abstracts)

PROGRAM

Friday, June 10, 2022

11:00 am-12:00 pm (Viking Foyer)	**Member/Guest Registration** **Exhibition Hall Opens**
12:00 -1:00 pm (Salons D/E)	**Industry Session:** *Speaker Lunch sponsored by Genmab* **Title:** "An Introduction to TIVDAK" **Speaker:** Josh Kesterson, MD – University of Pittsburgh Medical Center Director of the Gynecologic Oncology Program in Central PA
1:15-1:30 pm (Salon C)	**Presidential Welcome:** *Katina Robison, MD*
1:30-3:00 pm (Salon C)	**FIRST SCIENTIFIC SESSION** *(Abstract Schedule on Page 11)*
3:00-3:30 pm (Salon C)	**Break with Coffee, Snacks and Exhibits**
3:30-4:50 pm (Salon C)	**SECOND SCIENTIFIC SESSION** *(Abstract Schedule on Page12)*
5:00-6:30 pm (Salons A/B/C)	**Skip Granai "Introspective" Tumor Board:** *Sponsored by GlaxoSmithKline*
6:30-7:00 pm (Viking Foyer)	**Exhibition Hall Open**
6:30-7:30 pm (Courtyard)	**Cocktail Reception**

PROGRAM

Saturday, June 11, 2022

7:00 am (Viking Foyer)	**Registration Opens**
7:00-9:00 am (Salons D/E)	**Breakfast Buffet and Exhibition Hall Open**
7:30-8:30 am (Salons D/E)	**Industry Session:** Speaker Breakfast sponsored by AstraZeneca **Title:** *"LYNPARZA as Maintenance Monotherapy or Combination Therapy in Advanced Ovarian Cancer: Results from Key Clinical Trials"* **Speaker:** John Chan, MD – Director of Gyn Oncology, Associate Professor, UCSF Helen Diller Family Comprehensive Cancer Center
8:40-10:00 am (Salons A/B/C)	**THIRD SCIENTIFIC SESSION** *(Abstract Schedule on Page 13)*
10:00-10:30 am (Salons A/B/C)	**Break with Coffee and Exhibits**
10:30 am-12:15 pm (Salons A/B/C)	**FOURTH SCIENTIFIC SESSION** *(Abstract Schedule on Page 14)*
12:15-12:30 pm (Salons A/B/C)	**"Think about this …"** Katina Robison, MD, NEAGO President
12:30-1:30 pm (Salons A/B/C)	**Keynote Address** "Preventing and Treating Cervical Cancer in Low-Resource Settings" Kathleen M. Schmeler, MD *Director, MD Anderson Cancer Center and Lyndon B. Johnson (LBJ) Hospital Colposcopy Clinics*
1:30 pm	**Exhibits Close**
6:00-7:00 pm (Bellevue Patio)	**Cocktail Hour**
7:00 pm (Bellevue Ballroom)	**Dinner**

PROGRAM

Sunday, June 12, 2022

7:00-9:00 am (Salons D/E)	**Breakfast Buffet and Exhibition Hall Open**
7:00-7:45 am (Salons A/B/C)	**Annual Business Meeting, *Members Only***
7:45-8:45 am (Salons D/E)	**Industry Session:** Speaker Breakfast sponsored by Eisai **Speaker:** *"Exploring a Treatment Option for Patients With Certain Types of Advanced Endometrial Carcinoma"* **Title:** Sharad Ghamande, MD - Executive Vice Chair, and Director for Gynecological Oncology at Augusta University Georgia Regents University (GRU) at Augusta, Georgia.
9:00-10:25 am (Salons A/B/C)	**FIFTH SCIENTIFIC SESSION** *(Abstract Schedule on Page 15)*
10:25-10:40 am (Salons A/B/C)	**Break with Coffee and Exhibits**
10:40-11:30 am (Salons A/B/C)	**SIXTH SCIENTIFIC SESSION** *(Abstract Schedule on Page 16)*
11:40 am (Salons A/B/C)	**Closing Remarks:** *Katina Robison, MD, NEAGO President* **Announcement of Trainee Awards** **NEAGO 2023:** *Leslie Bradford, MD, NEAGO President-Elect*

ABSTRACT SCHEDULES

(Presenters' names have been listed in bold.)

FIRST SCIENTIFIC SESSION (Friday, June 10, 2022):

TOPIC – "Cancer Genetics: More than just Chromosomes"

Moderator – Valena Wright, MD

1:30 pm
Abstract #1

Ovarian cancer risk-reduction and screening in BRCA 1/2 mutation carriers. *Jessica B DiSilvestro MD, **Julia Dexter MD**, Jessica Haddad MD, Lindsey Beffa MD, Christina Raker ScD, Jessica Laprise MS, Jennifer Scalia-Wilbur MS, Melissa Clark PhD, Leslie Bradford MD, Amy Brown MD MPH, Erin Hofstatter MD, Disha Dalela MBBS, Maris Toland MD, Katina Robison MD, Ashley Stuckey MD*

1:40 pm
Abstract #2

Patterns of spread and genetic alterations of primary endometrioid carcinomas of the ovary. ***Varvara Mazina, MD**, Lauren Philp, MD, Kyle Devins, MD, Kaitlyn James, MPH, AK Goodman, MD, Eric Eisenhauer, MD, Rachel Sisodia, MD, Amy Bregar, MD, Esther Oliva, MD, Marcela del Carmen, MD*

1:50 pm
Abstract #3

Genomic landscape of female genital tract tumors from women in Maine participating in a community-based genomic testing protocol. ***Sam Reed, BA**, Emily Meserve, MD, MPH, Jens Rueter, MD, Leslie Bradford, MD*

2:00 pm
Abstract #4

Synthetic Lethal interaction between BRCA1 and FANCM mutations in human cancer cells. ***Kaitlin Nicholson**, Arvind Panday, Rajula Elango, Katharine Esselen, and Ralph Scully*

2:10 pm
Abstract #5

Clinical implications of Somatic and Germline BRCA Testing for Ovarian Cancer. ***Jasmine Ebott, MD**, Katherine Crawford, MS, Blair Byg, BS, Marcie Parker, MS, Katina Robison, MD, Ashley Stuckey, MD, Jennifer Scalia, MS*

2:20 pm
Abstract #6
Canceled

Cancerous Involvement of the Fallopian Tubes of Hereditary Breast Ovarian Cancer Syndrome and Lynch Syndrome Mutation Carriers: Update from the Creighton Hereditary Cancer Registry. ***Murray J. Casey**, Catherine Stoos, Agnes B. Colanta, Chhanda Bewtra, Carrie L. Snyder, Mark Stacey, Sarah J. Aurit*

SECOND SCIENTIFIC SESSION (Friday, June 10, 2022):

TOPIC – "Everything Surgical and More"

Moderator – Marguerite Palisoul, MD

3:30 pm Abstract #7
Early age at diagnosis of endometrial intraepithelial neoplasia and association with body mass index. ***Kaitlin Nicholson, MD***, *Annliz Macharia, Rachel Furuya, MD, Chelsea Manning, MD, Michele R Hacker, MD, Devon Abt, MD, Katharine Esselen, MD, Joseph Dottino, MD*

3:40 pm Abstract #8
Associations between compliance with an Enhanced Recovery After Surgery (ERAS) Program and survival from advanced stage ovarian cancer. ***Jason Silberman, MD***, *Sue Li, MD, Andrea Pelletier, MPH, Kevin M. Elias, MD*

3:50 pm Abstract #9
Neoadjuvant chemotherapy and interval debulking in patients with advanced ovarian cancer: A survey of gynecologic oncologists in New England. ***Andrew Polio, MD***, *Sarah E. Paraghamian, MD, John O. Schorge, MD*

4:00 pm Abstract #10
Comparing Gynecologic Oncologist versus General Surgeon outcomes following bowel resections during cytoreductive surgery: A study of the National Surgical Quality Improvement Database. ***Jasmine Ebott, MD***, *Phinnara Has, MS, Christina Raker, ScD, Katina Robison, MD, Tarra Evans, MD*

4:10 pm Abstract #11
Removal of Foley catheter prior to hospital discharge after radical hysterectomy is non-inferior to delayed removal: A retrospective review of trial of void after radical hysterectomy. ***Alicia Youssef, MD,*** *Julia Shinnick, MD, Alex Rosenthal, BA, Jennifer Pearson, BS, Rubin Raju MBBS, MD, John Occhino MS, MD, Erin Lips, MD, Kyle Wohlrab MD, Katina Robison, MD*

4:20 pm Abstract #12
Robotic versus Conventional Laparoscopic Surgical Staging in Endometrial Cancer for Morbidly Obese Patients: A Systematic Review and Meta-analysis of Complications. ***Aparna Kailasam MD***, *Giuseppe Cucinella MD, Cynthia Beeler MLS AHIP, Anousheh Shafa MD, Andrea Mariani MD, William Cliby MD, Carrie Langstraat MD*

4:30 pm Abstract #13
Direct oral anticoagulation versus enoxaparin as thromboprophylaxis in ovarian cancer patients following debulking surgery: A pilot study. ***Kathryn Kurchena, MD***, *Wade Barton, MD, PharmD, Erin Lips, MD, Elizabeth Lokich, MD, Christine Raker, ScD, Britny Rogala, PharmD, Alvaro Beltran, Kierstyn Smith, Robin Cram, Jane Chen, Katina Robison, MD*

4:40 pm Abstract #14
Cervical cancer screening and follow up practices in United States prisons. ***Alexa N. Kanbergs***, *Mackenzie W. Sullivan, Morgan Maner, Lauren Brinkley-Rubinstein, Annekathryn Goodman, Michelle Davis, Sarah Feldman*

THIRD SCIENTIFIC SESSION (Saturday, June 11, 2022):

TOPIC – "Back to Basics: Basic Science Research/Education"

Moderator – Alessandro Santin, MD

8:40 am Abstract #15
In Vitro and In Vivo Efficacy of Trastuzumab Deruxtecan (T-DXd) in Epithelial Ovarian Cancer with HER2/neu Overexpression. ***Levent Mutlu***, *Diego D. Manavella, Stefania Bellone, Justin Harold, Dennis Mauricio, Joan Tymon Rosario, Eric. E Siegel, Tobias Hartwich, Gary Altwerger, Gulden Menderes, Elena Ratner, Gloria S. Huang, Mitchell Clark, Vaagn Andikyan, Masoud Azodi, Peter E. Schwartz, Alessandro D. Santin*

8:50 am Abstract #16
Allogeneic T cells and NK cells infiltrate and target ovarian cancer cells in a three-dimensional spheroid model. ***Erin Lips MD***, *Nicole James PhD, Jennifer Ribeiro, PhD*

9:00 am Abstract #17
Ovarian and uterine carcinosarcoma cell lines show preclinical sensitivity to Elimusertib, a novel ataxia-telangiectasia and Rad3-related (ATR) kinase inhibitor therapy. ***Diego D. Manavella***, *Justin Harold, Stefania Bellone, Eric. E Siegel, Tobias Philip Max Hartwich, Yang Yang-Hartwich, Luca Zammataro, Levent Mutlu, Gary Altwerger, Gulden Menderes, Elena Ratner, Gloria S. Huang, Gary Mitchell Clark, Vaagn Andikyan, Masoud Azodi, Peter E. Schwartz, Ludmil B. Alexandrov, Alessandro D. Santin*

9:10 am Abstract #18
Circulating immune checkpoint receptors and cytokines are associated with improved patient prognosis in high grade serous ovarian cancer.
Katrin Eurich, *Amanda Laguna, Erin Lips, Payton De la Cruz, Morgan Woodman, and Nicole E James and Jennifer R Ribeiro*

9:20 am Abstract #19
A Low-Cost Educational Platform for Teaching Advanced Communication Skills to Trainees. ***Kristen Lee Moriarty, M.D.***, *Ross Albert, M.D., Marguerite Palisoul, M.D., Toby C. Campbell, M.D., M. Heather Einstein, M.D., M.S.*

9:30 am Abstract #20
The Impact of a Robotic Simulation Program for Ob/Gyn Residents on Surgical Operative Experience during Robotic Assisted Hysterectomy. ***Alicia M Youssef***, *M.D.; Jessica DiSilvestro, M.D., Merima Ruhotina, M.D., Kyle Wohlrab, M.D.*

FOURTH SCIENTIFIC SESSION (Saturday, June 11, 2022):

TOPIC – "Health Disparities and Equity/Global Health: It's a small world, after all!"

Moderator – Michael Muto, MD

10:30 am Abstract #21 — Treatment Delays Due to COVID-19 Infection in Gynecologic Oncology Patients. ***Jason Silberman, MD***, *Lauren Philp, MD, Kaitlyn James, PhD, Thomas Randall, MD*

10:40 am Abstract #22 — HPV point of care testing for cervical cancer screening. ***Ilana Cass MD***, *Jessica Bentz MD, Evelyn Fleming MD, Ivy Wilkinson-Ryan MD, Loyd West MD, Amogha Tadimety PhD, Alison Burklund PhD, Gregory J. Tsongalis MD*

10:50 am Abstract #23 — Gynecologic Oncology & Global Surgery: A Call to Action. ***Parisa Fallah***, *Michael Muto*

11:00 am Abstract #24 — NCCN Guideline-Discordant Care in Early-Stage Vulvar Cancer: A National Cancer Database Study. ***Alexandra Bercow MD***, *Alexander Melamed MD MPH, Whitfield Growdon MD, Eric Eisenhauer MD, Amy Bregar, George Molina MD MPH, Christina Minami MD MS*

11:10 am Abstract #25 — Association between travel distance to treatment facility and palliative therapy use for patients with advanced stage ovarian cancer. ***Elizabeth V. Adams, MD***, *Benjamin A. Sweigart, MA, Sarah E. Paraghamian, MD, John O. Schorge, MD*

11:20 am Abstract #26 — Healthcare cost trends highlight evolving disparities in endometrial cancer care: a database study. ***Manning WB***; *Eurich K, Miller K*

11:30 am Abstract #27 — The impact of primary language on endometrial cancer outcomes. ***Mackenzie Cummings, MD***, *Olivia Nicolais, MD, Tanvi Joshi, MD, Elizabeth R Burton, MD, Mitchell I Edelson, MD, Mark S Shahin, MD, Joel I Sorosky, MD, Tommy R. Buchanan Jr., MD*

11:40 am Abstract #28 — Cervical cancer screening and follow-up on abnormal screens in perinatal patients with Opioid Use Disorder. ***Courtney Knill, MD***, *Catherine Pollack, BS, PhD, Daisy Goodman, DNP, CNM, MPH, and Ilana Cass, MD*

11:50 pm Abstract #29 — Financial Toxicity in BRCA1 and BRCA2 carriers: A pilot study, *Ellie M Proussaloglou,* ***Alex E Rosenthal****, Christina Raker, Jennifer Scalia Wilbu1, Katrin E Eurich, Ashley Stuckey, and Katina Robison*

12:00 pm Abstract #30 — Preferred Cost Communicator in BRCA Mutation Carriers. *Ellie M Proussaloglou, MD,* ***Allan Huang, MD****, Alex Rosenthal MD, Christina Raker, ScD, Jennifer Scalia Wilbur, MS, Katrin E Eurich, MD, MPH, Ashley R Stuckey, MD, Katina M Robison, MD*

FIFTH SCIENTIFIC SESSION (Sunday, June 12, 2022):

TOPIC – "Treatment Options/Quality of Life: What more can we do for our patients?"

Moderator – Amy Bregar, MD

9:00 am
Abstract #31
Efficacy of Pembrolizumab in Combination with Bevacizumab and Oral Metronomic Cyclophosphamide in the Treatment of Platinum Resistant Recurrent Ovarian Cancer: A Retrospective Observational Study. ***Alexandra R. Steck,*** *Jovana Y. Martin, Timothy J. McElrath, Patrick F. Timmins III, Joyce N. Barlin*

9:10 am
Abstract #32
CA-125 monitoring in Gynecologic cancer patients receiving COVID-19 vaccines: are post-vaccination levels reliable? ***Elizabeth Thayer, MD****, Lindsay Walsh, BA, Katherine Leung, MPH, Sharmilee Korets, MD*

9:20 am
Abstract #33
Patient-reported drivers of financial toxicity in gynecologic cancers: A focus group study. ***Kaitlin M Nicholson, MD****, Rasha Baig, Sarah Gladstone, Christine Sweeney, LICSW, Michele R Hacker, ScD, MSPH, Laura E. Dodge, Katharine M Esselen, MD*

9:30 am
Abstract #34
Risk factors and impacts of financial toxicity in patients with gynecologic cancer. ***Annika Gompers****, Rasha Baig, Joanne Jang, Meghan Shea, Michele R. Hacker, Katharine M. Esselen*

9:40 am
Abstract #35
Impact of out-of-pocket payments and bad debt write-offs on financial toxicity in patients with gynecologic cancers. ***Rasha A. Baig****, Annika Gompers, Kaitlin Nicholson, Michele R. Hacker, Katharine M. Esselen*

9:50 am
Abstract #36
Non-surgical management of grade 1 endometrioid-type endometrial adenocarcinoma and endometrial intraepithelial neoplasia.
M. Larissa Weirich MD*, Carolyn R Larkins, Wendy Craig PhD, Leslie S Bradford MD*

SIXTH SCIENTIFIC SESSION (Sunday, June 12, 2022):

TOPIC – "Sentinel Node: Can we do less?"

Moderator – Elizabeth Lokich, MD

10:40 am
Abstract #37
Preoperative predictors of concurrent endometrial cancer in patients with endometrial intraepithelial neoplasia: Is there a role for sentinel lymph node dissection? ***Devon A. Harris MD***, *Annliz Macharia MPH, Michele R. Hacker ScD, Rasha Baig, Katharine M. Esselen MD MBA, Jennifer Ducie MD*

10:50 am
Abstract #38
Sentinel Lymph Node Biopsy Utilization in Early-Stage Vulvar Cancer: A National Cancer Database Study. ***Alexandra Bercow MD***, *Alexander Melamed MD, Whitfield Growdon MD, Eric Eisenhauer MD, Amy Bregar, George Molina MD, Christina Minami MD*

11:00 am
Abstract #39
Indocyanine Green Improves Learning Curve for Sentinel Lymph Node Detection for Endometrial and Cervical Cancers. ***Kristen Lee Moriarty, MD***, *M. Heather Einstein, M.D., Xun Clare Zhou, M.D.3, Jonathan A. Cosin, MD*

11:10 am
Abstract #40
Surgical site complications after inguinal lymph node dissection in women with vulvar cancer. ***Jessica DiSilvestro MD***, *Katina Robison MD, Elizabeth Lokich MD*

1. Ovarian cancer risk-reduction and screening in BRCA 1/2 mutation carriers

Jessica B DiSilvestro MD, Julia Dexter MD, Jessica Haddad MD, Lindsey Beffa MD, Christina Raker ScD, Jessica Laprise MS, Jennifer Scalia-Wilbur MS, Melissa Clark PhD, Leslie Bradford MD, Amy Brown MD MPH, Erin Hofstatter MD, Disha Dalela MBBS, Maris Toland MD, Katina Robison MD, Ashley Stuckey MD

Objective: To determine the utilization of risk-reducing strategies and screening protocols for ovarian cancer in BRCA 1/2 carriers.

Methods: A multi-center, cross-sectional survey was conducted of BRCA1/2 mutation carriers unaffected by cancer. The electronic questionnaire with 2-to-23 fixed-response questions was emailed using REDCap. Data were analyzed with Fisher's exact test.

Results: The survey was completed by 105 female BRCA mutation carriers (34% response rate). BRCA subtypes included BRCA2 54.3%, BRCA1 41.0% and both 2.9%. The age at which patients underwent genetic testing varied (18-24y: 21.0%, 25-34y: 24.8%, 35-44y: 30.5%, 45-54y: 17.1%, >55y: 6.7%). Approximately half (55.8%) of respondents reported being offered increased screening for possible early detection of ovarian cancer. Of the 79 women with genetic testing before 45 years, 41.8% underwent increased ovarian cancer screening with transvaginal ultrasound alone (21.2%), CA125 alone (12.1%), or combined (63.6%). There was no difference in screening utilization based on BRCA mutation (BRCA1 40.0%, BRCA2 42.5%; p=0.93). Nearly all respondents (97.1%) reported that a provider had discussed risk-reducing surgeries. Sixty women underwent a risk-reducing bilateral salpingo-oophorectomy which was recommended in similar proportions by gynecologic oncologists (58.3%), OBGYNs (48.3%) and genetic counselors (46.7%). Overall, 43.3% of respondents reported that a healthcare provider recommended taking combined oral contraceptive pills (COCs) to reduce ovarian cancer risk; of these women, 86.7% chose to use them. COCs were offered at higher rates among younger women (18-24y: 86%, 25-34y: 62%, 35-44y: 23%; p<0.0001) as well as women with BRCA1 mutations (BRCA1 60%, BRCA2 43%; p=0.048).

Conclusion: In our cohort of BRCA mutation carriers, ovarian cancer screening was offered to only half of women. While most had discussed surgical options, less than half of women received recommendations to use medication-based risk-reduction. Further investigation is needed to identify barriers to utilization of ovarian cancer screening and nonsurgical risk-reduction among this high-risk population.

2. Patterns of spread and genetic alterations of primary endometrioid carcinomas of the ovary.

Varvara Mazina, MD, Lauren Philp, MD, Kyle Devins, MD, Kaitlyn James, MPH, AK Goodman, MD, Eric Eisenhauer, MD, Rachel Sisodia, MD, Amy Bregar, MD, Esther Oliva, MD, Marcela del Carmen, MD.

Objective: Primary endometrioid carcinoma of the ovary is rare and comprises approximately 10 percent of all primary ovarian carcinomas. Less is known about their pattern of spread and genetic alterations. The objective of this study was to characterize patterns of spread, rate of recurrence, and genetic alterations in a cohort of patients with primary endometrioid ovarian carcinoma.

Methods: After obtaining institutional review board approval, all patients diagnosed with primary endometrioid adenocarcinoma of the ovary between January 1st, 2012 until May 11th, 2021 were identified from an institutional pathology database. All cases were subject to expert pathologic review to confirm diagnosis. Patients with coexisting neoplasms were excluded. Demographic and disease related data were collected from pathology reports and clinical records and time to recurrence and death were calculated if applicable. Statistical analyses were performed using SAS statistical software version 9.4.

Results: Sixty-three patients were identified for analysis. Median age at diagnosis was 60 (range 22-90) and the median CA-125 at presentation was 133 U/mL (mean 1140 U/mL, range 7-21,545 U/mL). Assigned International Federation of Gynecology and Obstetrics (FIGO) stage after surgery included IA, 17 (27%); IC, 24 (38%); II, 17 (27%); III, 4 (6%) and assigned histologic grade was 1 in 32%, 2 in 43%, and 3 25% of patients. Either at primary or re-staging surgery, 41 (65%) patients had pelvic lymph node sampling and 33 (52%) had para-aortic lymph node sampling. The median number of pelvic lymph nodes removed was 12 (mean, 13.1; range 1-46) and the median number of para-aortic lymph nodes removed was 6 (mean, 8.7; range 1-46). All assessed lymph nodes were negative for metastases. Twenty-eight patients had germline mutational status documented. Only two patients had pathologic mutations identified - one in BRCA1 and one in BRCA2. The median progression free survival (PFS) and overall survival (OS) for the cohort was 42 and 44 months, respectively. For patients with clinically ovarian-confined disease, complete staging did not significantly impact PFS or OS, even after adjusting for age and histologic grade in a Cox proportional hazards model. 10 out of 63 patients (16%) experienced recurrence(s) with a median time to recurrence of 25 months. Four patients died of disease with median OS of 31 months.

Conclusion: There were no lymph nodal metastases in cohort of patients with comprehensively staged endometrioid ovarian carcinoma. Surgeons may consider omitting re-staging operations in patients with incompletely staged but grossly resected endometrioid ovarian carcinoma, regardless of grade. Germline BRCA1 and BRCA2 mutations are seen less frequently compared to high-grade serous carcinomas.

3. Genomic landscape of female genital tract tumors from women in Maine participating in a community-based genomic testing protocol

Sam Reed, BA, Emily Meserve, MD, MPH, Jens Rueter, MD, Leslie Bradford, MD

Objectives: The Maine Cancer Genomics Initiative (MCGI) established a system for providing cancer genomic testing in a rural setting. The goal of this project was to characterize the genomic landscape of female genital tract tumors analyzed by MCGI.

Methods: Tumor samples from 218 patients with female genital tract malignancies were analyzed using one of three next-generation sequencing panels, each of which tested for >200 genes of interest. Frequency of common mutations were examined in subgroups stratified by primary site, histopathologic diagnosis, and tumor grade. Contingency analysis was performed to compare these rates to those for similar subgroups seen in the Cancer Genome Atlas (TCGA).

Results:
High grade serous carcinoma of tuboovarian origin (HGSOC) was the most represented histopathologic diagnosis (47.5%). Within HGSOC, TP53 mutation occurred in 84% of cases compared to 96% seen in TCGA data (p-value 0.001). CCNE1 (cyclin-E) amplification occurred with decreased frequency, with 16% of cases amplified in BRCA1 wild-type tumors (versus 26% in TCGA, p-value 0.06) and 0% amplified in BRCA1 mutant tumors (versus 8% in TCGA, p-value 0.26). BRCA1 mutation occurred in 9.6% of cases, compared to 3.5% in TCGA data (p-value 0.031). Rates of mutation in endometrioid endometrial carcinoma were similarly comparable to TCGA, however, PTEN was mutated in only 20% of grade 1 endometrioid endometrial carcinomas (versus 80.9% in TCGA, p-value 0.0003).

Conclusions: This descriptive study characterizes the genomic landscape of female genital tract tumors in a community-based oncology care setting compared to TCGA. While limited in statistical power due to sample size of subgroups, the frequency of common genomic changes appeared roughly similar to those observed in TCGA data. Frequency of TP53 and BRCA1 mutations, as well as CCNE1 amplification differ significantly from TCGA data, which warrants further study.

4. Synthetic Lethal interaction between BRCA1 and FANCM mutations in human cancer cells

Kaitlin Nicholson, Arvind Panday, Rajula Elango, Katharine Esselen, and Ralph Scully

Objectives: DNA damage and its repair mechanisms (or lack thereof) are central to the induction of mutations driving cancer development. Genomes of human breast and ovarian cancers lacking BRCA1 contain abundant non-homologous tandem duplications (TDs), which drive BRCA1-linked cancer by disrupting tumor suppressor genes. The mechanisms underlying repair pathway choice at stalled forks are poorly understood but are known to involve the Fanconi Anemia pathway. The Fanconi anemia complementation group M gene, FANCM, encodes a multi-domain scaffolding and motor protein that interacts with several distinct repair protein complexes at stalled forks. We found previously that loss of FANCM greatly enhances TD formation in Brca1 mutant mouse embryonic stem (mES) cells. This finding suggested that combined inactivation of BRCA1 and FANCM may produce intolerable levels of genomic instability. Our goal here is to define how FANCM and BRCA1 interact in human cancer cells.

Methods: To study relationships between loss-of function mutations in FANCM and BRCA1, we first deleted wild type Brca1 in Fancm mutant mES cells. We found that Brca1 inactivation is synthetic lethal with Fancm mutation in this setting. Notably, specific inactivation of FANCM motor protein/ATPase activity was also synthetic lethal with Brca1 loss. These findings raise the possibility that FANCM might be a "druggable" target for therapy in BRCA1 mutant cancers. We searched for a similar synthetic lethal interaction between BRCA1 and FANCM mutations in human cancer cells. To this end, we studied the impact of FANCM depletion or, in parallel, CRISPR/Cas9-mediated deletion of FANCM on the viability of BRCA1 mutant ovarian cancer cell line UWB1.289, as well as additional BRCA1 mutant cancer cell lines and wild type controls. We also used CRISPR/Cas9 strategies in an effort to revert UWB1.289 cells to (functionally) wild type BRCA1 status.

Results: We found that inactivation of FANCM severely compromises the viability of BRCA1 mutant cancer cell lines, while having minimal impact on the viability of cancer cell lines that harbor wild type BRCA1. These findings suggest that the synthetic lethal interaction noted between Brca1 and Fancm in mES cells also operates in human cancer cells. Our current work has identified clonal derivatives of the UWB1.289 cell line in which the native frame-shifted BRCA1 allele has been reverted to an open reading frame, suggestive of reversion to a functionally wild type allele. Functional analysis of these clones, and of non-revertant control clones, is ongoing.

Conclusions: The ATPase function of FANCM may represent a promising "druggable" target for synthetic lethal therapy of BRCA1 mutant cancers. Our ongoing experiments are aimed at validating this concept and developing it as a therapeutic strategy.

5. Clinical implications of Somatic and Germline BRCA Testing for Ovarian Cancer

Jasmine Ebott, MD, Katherine Crawford, MS, Blair Byg, BS, Marcie Parker, MS, Katina Robison, MD, Ashley Stuckey, MD, Jennifer Scalia, MS

Objective: Ovarian cancer (OC) is a significant cause of mortality among women. However, those with BRCA variants have enhanced sensitivity to treatment with poly (ADP-ribose) polymerase (PARP) inhibitors and improved overall survival. The NCCN recommends that all patients newly diagnosed with OC, fallopian tube (FT) and primary peritoneal (PP) cancer undergo germline and somatic genetic testing. Our objective was to evaluate the prevalence of pathogenic germline and somatic BRCA 1/2 variants in patients with OC, FT or PP at our institution. We also sought to elucidate our rate of adherence to this recommendation in our clinical practice.

Methods: Somatic results were obtained from OC, FT and PP patients tested between January 2021 and April 2022 at Women and Infants Hospital (WIH). Retrospective chart review of patients was completed under the aforementioned time frame to confirm histology and to review germline test results.

Results: There were 77 OC, FT and PP diagnoses, of those 53 (68.8%) completed somatic testing. 11 out of 53 (20.8%) patients were found to have a BRCA somatic variant. 9 of the 11 completed germline testing with only 1 patient (11.1%) found to harbor a germline BRCA pathogenic variant. Of the 53 patients that had somatic testing, 45 (84.9%) also completed germline testing. In addition to BRCA somatic variants, two patients were found to have a RAD51C somatic variant and one patient a PTEN variant. Both patients also had corresponding germline pathogenic variants confirmed.

Conclusion: The majority of ovarian cancer cases at our institution completed both germline and somatic testing. Somatic BRCA testing reveals a larger subgroup of germline negative patients who may benefit from PARP inhibitor treatment. Regardless of germline status, our data highlights the importance of completing somatic testing to provide effective treatment planning.

6. Cancerous Involvement of the Fallopian Tubes of Hereditary Breast Ovarian Cancer Syndrome and Lynch Syndrome Mutation Carriers: Update from the Creighton Hereditary Cancer Registry

Murray J. Casey, Catherine Stoos, Agnes B. Colanta, Chhanda Bewtra, Carrie L. Snyder, Mark Stacey, Sarah J. Aurit

Canceled – Not presented

Objective: Advances toward understanding the genesis of gynecologic cancer underlie this detailed report and classification of 43 cases of cancerous fallopian tube (FT) involvement in Hereditary Breast Ovarian Cancer (HBOC) syndrome and Lynch syndrome (LS) mutation carriers accrued to the Creighton Hereditary Cancer Registry (CHCR) from 1959 through 2020.

Methods: The CHCR was searched for gynecologic and/or peritoneal cancers in BRCA1 and BRCA2 mutation carriers from HBOC syndrome families and MSH2, MSH6, and PMS2 mutation carriers from LS families. Thirty-six HBOC and seven LS mutation carriers with cancerous FT involvement were identified. Slides from 19 cases, were re-classified using WHO 2020 criteria, and p53 IHC was performed in 15 cancers.

Results: Of 35/36 HBOC-linked tumors accrued as moderate to high-grade carcinomas, 14 were classified as HGSC (6) or HGSC-SET (8) carcinomas of which 10/10 had p53 staining consistent with a TP53 mutation. The FT locations of tumors were intralumenal (9), fimbrial (9), and varied. Three cancers showed evidence of transition from pre-invasive lesions. Metastases were documented in 34/36 HBOC syndrome cases. Three LS-linked tumors registered as endometrioid carcinomas, one mixed endometrioid-clear cell and one clear cell carcinoma were confirmed, and all showed wild-type p53 IHC staining. Confirmatory endometrioid features (CEF) were documented in 4/7 LS cases: three were associated with endometriosis, and one had synchronous FT and endometrial endometrioid carcinomas. Metastases were noted in two LS cases.

Conclusion: All classified HBOC-linked cancers were HGSC and showed p53 IHC consistent with TP53 mutations. LS-linked cancers contained only endometrioid and/or clear cell carcinoma elements and had wild-type staining. CEF were common in LS cases, but neither endometriosis nor endometrial cancer was reported in HBOC-linked cancers. Müllerian epithelia are the likely source of carcinomas involving the reproductive organs of HBOC and LS mutation carriers. This has significant implications for risk reduction and research.

7. Early age at diagnosis of endometrial intraepithelial neoplasia and association with body mass index

Kaitlin Nicholson, MD, Annliz Macharia, Rachel Furuya, MD, Chelsea Manning, MD, Michele R Hacker, MD, Devon Abt, MD, Katharine Esselen, MD, Joseph Dottino, MD

Objective: Elevated body mass index (BMI) is a risk factor for the development of both endometrioid endometrial cancer (EEC) and endometrial intraepithelial neoplasia (EIN). Prior studies have identified a correlation between higher BMI and earlier age of diagnosis of EEC. It is unknown if such an association exists for patients with EIN. Our objective was to quantify the association between BMI and age at time of EIN diagnosis.

Methods: We conducted a retrospective chart review of patients diagnosed with EIN from 2010 to 2020 at a large academic medical center. Data are presented as percent or mean ± standard deviation. The association between BMI and age at diagnosis was quantified using the Pearson correlation coefficient (r). Characteristics of patients <51 years and ≥51 years were compared using a chi-square or t test.

Results: We identified 522 patients with EIN; 500 (96%) had complete medical records. The mean age was 42 ± 7 for patients <51 years and 62 ± 7 for those ≥51 years. Among patients <51, BMI increased with younger age at diagnosis (r: -0.30; p<0.0001). There was no association for BMI and age at diagnosis among patients ≥51 (r: 0.07; p: 0.20). Patients <51 were more likely to be nulliparous and to have a history of polycystic ovary syndrome than patients ≥51.

Conclusion: In a large cohort of patients with a preoperative diagnosis of EIN, increasing BMI was associated with an earlier age at diagnosis in patients <51 years. Polycystic ovary syndrome and nulliparity were more common in patients <51 years. This data supports consideration of endometrial sampling in younger patients with increasing obesity and other risk factors for excess estrogen exposure.

8. Associations between compliance with an Enhanced Recovery After Surgery (ERAS) Program and survival from advanced stage ovarian cancer

Jason Silberman, MD; Sue Li, MD; Andrea Pelletier, MPH; Kevin M. Elias, MD

Objective: To evaluate the relationship between compliance with an Enhanced Recovery After Surgery (ERAS) protocol for patients with advanced epithelial ovarian cancer undergoing first-line therapy, including open cytoreductive surgery, and progression free and overall survival.

Methods: Medical records were reviewed for patients with FIGO stage IIIA-IVB epithelial ovarian, fallopian tube, or primary peritoneal cancer undergoing primary or interval cytoreductive surgery from March 2017 through September 2019. All patients were enrolled on an ERAS protocol at the time of their cytoreductive surgery. Demographic information, medical history, perioperative characteristics, and ERAS compliance were evaluated using univariate and multivariate models. A multivariable Cox model was used to evaluate progression free survival and overall survival differences stratified by levels of ERAS compliance, which were classified as compliance <70%, 70-79%, 80-89%, and >90%.

Results: Of 229 patients undergoing cytoreductive surgery via laparotomy, 155 received neoadjuvant chemotherapy and 74 received primary cytoreduction. Median ERAS protocol compliance was 75% (range 50-95), with 76.9% of patients having >70% compliance, 42.8% with >80% compliance, and 10.5% with >90% compliance. In the multivariable analysis, >90% ERAS compliance (adjusted HR 0.39 [95% CI, 0.16 – 0.94], p=0.036) was associated with the greatest improvement in progression free survival compared to <70% ERAS compliance. There were no preliminary differences in overall survival associated with increased ERAS compliance, though with relatively short follow-up to date.

Conclusion: There is a range of compliance with ERAS protocols in patients undergoing cytoreductive surgery for ovarian cancer. While we did not see preliminary differences in overall survival associated with variations in ERAS compliance, optimal ERAS compliance is an independent predictor of improved progression free survival.

9. Neoadjuvant chemotherapy and interval debulking in patients with advanced ovarian cancer: A survey of gynecologic oncologists in New England

Andrew Polio, MD, Sarah E. Paraghamian, MD, John O. Schorge, MD

Objective: Studies demonstrate similar survival rates and improved perioperative outcomes in select patients with advanced stage ovarian cancer undergoing neoadjuvant chemotherapy (NACT) and interval debulking surgery (IDS) compared to primary cytoreductive surgery. The goal of this survey study is to assess the perspectives of gynecologic oncologists within New England regarding NACT and surgical approach of IDS in patients with advanced ovarian cancer.

Methods: An electronic survey was administered to members of New England Association of Gynecologic Oncologists (NEAGO) to assess current use of and perspective toward NACT/IDS, surgical approach, and chemotherapy regimens for patients with advanced ovarian cancer. Descriptive statistics were used to determine correlation between variables and the current use of NACT/IDS.

Results: The survey response rate was 29.1% (n=25/86). The majority of respondents practiced in an academic setting (84.0%), received fellowship training in the northeast (48.0%), and have been practicing for greater than twenty years (44.0%). Most were based in Connecticut and Rhode Island (44.0%). 68.0% of respondents report offering NACT/IDS to more patients over the last 5 years. Anecdotal/personal experience and newly published research were the most cited reasons of those who reported a change in their approach to IDS. 68.0% prefer an open approach to IDS. Of those who prefer MIS, 87.5% prefer laparoscopic versus robotic assisted. Most administer three to four cycles of adjuvant chemotherapy regardless of whether no residual disease (96.0%) is noted in the specimen or if there is residual disease in the specimen but patient is optimally debulked (80.0%).

Conclusion: NACT/IDS is increasingly offered to patients with advanced stage ovarian cancer in New England. The majority of providers prefer an open surgical approach for IDS. Further research is warranted in the utility of MIS approach and optimal chemotherapy duration.

10. Comparing Gynecologic Oncologist versus General Surgeon outcomes following bowel resections during cytoreductive surgery: A study of the National Surgical Quality Improvement Database

Jasmine Ebott, MD, Phinnara Has, MS, Christina Raker, ScD, Katina Robison, MD, Tarra Evans, MD

Objective: Extensive bowel related surgery is often necessary to achieve compete cytoreduction in patients with advanced epithelial ovarian cancer (EOC). These complex surgeries are often performed by a variety of surgical subspecialties. Colorectal and general surgeons are often consulted for assistance in these cases. However, several studies have demonstrated that these complex surgeries should be performed by a gynecologic oncologist as they understand the disease specific behavior of EOC better than their other surgical colleagues. The objective of this study is to compare surgical outcomes between gynecologic oncologist and general surgeons who performed a bowel surgery as part of the cytoreductive surgery among women with ovarian cancer.

Methods: Analysis of N=1350 cytoreductive surgeries performed by gynecologic oncologist versus general surgeons for suspected ovarian malignancies recorded in American College of Surgeons' National Surgical Quality Improvement Program (NSQIP) datasets from 2016-2020 was performed. The primary outcome of interest is anastomotic leak after bowel surgery. Patient characteristics, perioperative variables, intra- and post-operative morbidity events were recorded and compared between groups using Wilcoxon rank-sum and Fisher's exact test.

Results: A total of 1305 cases met inclusion criteria. Gynecologic oncologist performed 1054 cases (80.8%), while General Surgery performed 251 cases (19.2%). There were no differences in age, body mass index, smoking status, use of chronic steroids, pre-operative albumin, and functional status. There were no differences between surgical subspecialties in 30-day perioperative complications assessed, including death, re-operation, surgical site infection, or wound dehiscence. Blood transfusion occurred more frequently in the gynecologic oncology group at 55% compared to the general surgery group which was 47.4%, this was statistically significant (p=0.02). Bowel specific morbidity data is currently being analyzed.

Conclusion: Gynecologic oncologist and general surgeons achieve equivalent outcomes comparing 30-day perioperative complications following cytoreductive surgery associated with bowel procedures. These results support that both gynecologic oncologist and general surgery provide similar care with regards to bowel related procedures in patients with epithelial ovarian cancer.

11. Removal of Foley catheter prior to hospital discharge after radical hysterectomy is non-inferior to delayed removal: A retrospective review of trial of void after radical hysterectomy

Alicia Youssef, MD; Julia Shinnick, MD; Alex Rosenthal, BA; Jennifer Pearson, BS; Rubin Raju MBBS, MD; John Occhino MS, MD; Erin Lips, MD; Kyle Wohlrab MD; Katina Robison, MD

Objective: To compare outcomes after radical hysterectomy between patients undergoing trial of void (TOV) in the immediate post-operative hospitalization versus TOV after discharge.
Methods: This is a retrospective non-inferiority study of patients who underwent laparoscopic, robotic, or abdominal radical hysterectomy at two academic tertiary referral centers between January 2010 and January 2020. Participants were stratified according to timing of first post-operative TOV: before versus after discharge from the index hospitalization. Outcomes assessed included percentage who failed the initial TOV, percentage who re-presented with urinary retention after passing initial TOV, symptomatic dysuria within 30 days of discharge, and de novo urinary dysfunction. We hypothesized that urinary outcomes following pre-discharge TOV would be within a 15% non-inferiority margin of outcomes following post-discharge TOV.

Results: One hundred seventy-three participants were included. The most common indication for radical hysterectomy was cervical cancer 113/173 (65.3%), followed by uterine (28/173; 16.2%) and ovarian (20/173; 11.6%). Ninety-one participants (91/173, 52.6%) underwent abdominal procedures, 26/173 (15%) laparoscopic and 56/173 (32.4%) robotic. There was no significant difference in pre-procedure urinary dysfunction between groups (p=0.93). Ninety-four (94/173, 54.3%) participants underwent pre-discharge TOV, of which 10 (10.6%) failed. Of the post-discharge TOV participants (79/173, 45.7%), 5/79 (6.3%) failed. The proportion of participants who failed their initial TOV between groups did not exceed the pre-specified non-inferiority margin (95% CI -3.9% to 12.5%). More participants re-presented with urinary retention in the pre-discharge TOV group (7.5% versus 0%; 95% CI -12.8% to -2.1%). There was no significant difference in symptomatic dysuria within 30 days of discharge (1.1% versus 1.3%; 95% CI -13.4 to 5.1%). De novo urinary dysfunction was more common in the post-discharge TOV group (24.3% versus 48.3%, 95% CI -40.0% to -8.0, p=0.006).

Conclusion: After radical hysterectomy, urinary outcomes following pre-discharge TOV are noninferior to post-discharge TOV

12. Robotic versus Conventional Laparoscopic Surgical Staging in Endometrial Cancer for Morbidly Obese Patients: A Systematic Review and Meta-analysis of Complications

Aparna Kailasam MD, Giuseppe Cucinella MD, Cynthia Beeler MLS AHIP, Anousheh Shafa MD, Andrea Mariani MD, William Cliby MD, Carrie Langstraat MD

Objective: To evaluate whether complication rates, conversion to laparotomy and other operative factors varied between robotic surgery (RS) and laparoscopic surgery (LS) for staging for endometrial cancer in patients with morbid obesity (BMI ≥ 40).
Methods: We conducted a systematic review by searching Ovid, Pubmed, Scopus, and Web of Science databases from January 1, 2000 to January 20, 2022 for key search terms related to hysterectomy and surgical staging for endometrial cancer (laparoscopic versus robotic) in patients with morbid obesity. We calculated pooled odds ratios from random effects models for proportions of perioperative complications and conversions to laparotomy. For continuous outcomes such as estimated blood loss, length of stay and operative time, we calculated pooled mean differences.

Results: After initially identifying 236 abstracts for review, we selected 6 studies that met our inclusion criteria for comparing the two groups. A total of 892 patients were included for analysis between the 6 studies. The pooled odds ratio for complications for LS vs RS was 1.277 (95% CI 0.769, 2.119). In evaluating conversion to laparotomy, the pooled odds ratio was 2.530 for LS vs RS with a 95% CI (0.511, 12.532), though there were minimal cases of conversion. Pooled mean difference for operative time between LS and RS was 5.254 minutes (95% CI -49.342, 38.833) less time for LS than for RS.

Conclusion: Based on our review, there is insufficient evidence to determine a difference between rates of operative complications and conversion to laparotomy between LS and RS have in morbidly obese patients undergoing staging for surgical cancer. However, robotic approach appears to be faster. Further research with randomized controlled trials and/or larger observational studies is necessary to confirm these findings given the limited data currently available.

13. Direct oral anticoagulation versus enoxaparin as thromboprophylaxis in ovarian cancer patients following debulking surgery: A pilot study

Kathryn Kurchena, MD, Wade Barton, MD, PharmD, Erin Lips, MD, Elizabeth Lokich, MD, Christine Raker, ScD, Britny Rogala, PharmD, Alvaro Beltran, Kierstyn Smith, Robin Cram, Jane Chen, Katina Robison, MD

Objective: Postoperative venous thromboembolism (VTE) is a cause of morbidity in gynecologic cancer patients with the highest risk following exploratory laparotomy. Guidelines recommend postoperative prophylaxis (PPx) with 28-days of enoxaparin (LMWH); however, Direct Oral Anticoagulants (DOACs) are a recently viable option. This pilot study assesses the feasibility of recruitment, retention, and adherence to protocol when comparing medication adherence rates (mAR) and quality of life (QOL) between apixaban or LWMH for VTE PPx following laparotomy.

Methods: This randomized controlled (RTC) pilot study enrolled those with intraoperative findings consistent with ovarian, fallopian tube or primary peritoneal cancer (OVc). Randomization was 1:1 to LWMH 40mg subcutaneously daily (LWMH40) or apixaban 2.5mg orally twice daily (DOAC2.5) for 28-days postoperatively. Assessments were completed at 3 postoperative timepoints – 2-weeks, 28-days, 6-weeks – evaluating mAR and QOL. Calendars and medication counts evaluated mAR, while the Anti-Clot Treatment Scale (ACTS) determined anticoagulant satisfaction and perceived benefit. Randomization of twenty-four participants was based on historical references and not to detect statistical significance between variables.

Results: Of fifty-seven eligible, twenty-four patients (42%) were randomized. One patient death from disease occurred in LMWH40 prior to data collection. 100% (11/11), 81% (9/11) and 81% (9/11) of LMWH40 vs. 91% (11/12), 100 (12/12) and 66% (8/12) of DOAC2.5 completed questionnaires and medication calendars at 2-weeks, 28-days, and 6-weeks respectively. 9% (1/11) of LMWH40 vs. 41% (5/12) of DOAC2.5 missed at least one medication dose (p=0.18). A higher perceived benefit for DOAC2.5 vs. LMWH40 at 28-days was suggested (ACTS score 72 vs 69, p=0.04).

Conclusion: Conducting a RTC comparing LWMH40 to DOAC2.5 for VTE PPx following laparotomy in OVc patients is feasible. Willingness to complete questionnaires and medication calendars seems to wane as time elapses from surgery. A larger RTC is needed to truly elucidate differences in mAR, perceived benefit, and QOL between anticoagulants.

14. Cervical cancer screening and follow up practices in United States prisons

Alexa N. Kanbergs, Mackenzie W. Sullivan, Morgan Maner, Lauren Brinkley-Rubinstein, Annekathryn Goodman, Michelle Davis, Sarah Feldman

Objectives: Given incarcerated women are up to four times more likely than their community counterparts to be diagnosed with cervical cancer, our objective was to better understand cervical cancer screening and follow up practices in US prisons.

Methods: A 29 question survey examining cervical cancer screening practices, education, and facility/patient characteristics was disseminated to state prison medical directors/administrators.

Results: Seventy percent (35/50) of state medical directors completed the survey between August 2021-January 2022. All facilities provided cervical cancer screening both at intake and specified intervals. Thirty-six percent (36%) provided colposcopy on-site, and 9% performed excisional procedures on-site. Eleven states identified one to five cases of cervical cancer within the last year. Frequently cited challenges included lack of patient interest, delays in community referral, and lack of follow-up of abnormal results post-release.

Conclusions: Cervical cancer disproportionately impacts women who are incarcerated. In our study we found relatively high rates of screening with was lack of patient interest as the most reported barrier. Follow-up care was also often plagued by reported lack of patient interest, delays in community referral for diagnostic procedures, and patient release prior to follow up. There is room for further optimization of screening and surveillance among incarcerated women by understanding and addressing systems-based challenges. We can reduce disparities in care among incarcerated women by understanding patient barriers to primary screening, expanding access to on-site testing and community referral for abnormal results, and streamlining post-release follow-up.

15. In Vitro and In Vivo Efficacy of Trastuzumab Deruxtecan (T-DXd) in Epithelial Ovarian Cancer with HER2/neu Overexpression

Levent Mutlu, Diego D. Manavella, Stefania Bellone, Justin Harold, Dennis Mauricio, Joan Tymon Rosario, Eric. E Siegel, Tobias Hartwich, Gary Altwerger, Gulden Menderes, Elena Ratner, Gloria S. Huang, Mitchell Clark, Vaagn Andikyan, Masoud Azodi, Peter E. Schwartz, Alessandro D. Santin

Objective: Epithelial ovarian cancer (EOC) has high recurrence rates, and treatment options are limited. Trastuzumab Deruxtecan (T-DXd) is a novel anti-HER2 antibody linked to the topoisomerase I inhibitor. This study aimed to determine the in vitro and in vivo efficacy of T-DXd in EOC.

Methods: HER2 expression was analyzed with flow cytometry in primary high grade serous (KRCH31 and OVA3) and clear cell (OVA10 and OVA12) EOC cell lines. Cell lines were treated with T-DXd or Control antibody drug conjugate (CTL ADC). The 50% inhibitory concentration (IC50), apoptosis, bystander antitumor assays were performed using a flow cytometer. HER2-overexpressing KRCH31 cells were injected subcutaneously into SCID mice, animals were randomized to IV PBS, CTL ADC, or T-DXd treatment.

Results: KRCH31 and OVA10 EOC cell lines expressed HER2 by flow cytometry, OVA3 and OVA12 had negligible expression. T-DXd mean IC50 were 0.014 µg/ml and 0.017 µg/ml for KRCH31 and OVA10 cell lines, respectively. No inhibitor effect of T-DXd was observed in the OVA3 or OVA12 cell lines. Compared to CTL ADC, T-DXd treatment increased apoptotic cells from 5% to 65% in KRCH31 cell line, and from 8% to 60% in the OVA10 cell line, assessed by Annexin and PI Staining. T-DXd treatment did not show cytotoxicity on ARK4-GFP cells; but when co-cultured with KRCH31 or OVA10 cells, substantial cytotoxicity was observed due to bystander antitumor activity (live ARK4-GFP cells 55% and 50%, respectively). On day 8, mean tumor volumes were 0.86, 0.81 and 0.43 cm3 in PBS, CTL ADC and T-DXd treated mice, respectively (p=<0.001). Median overall survival was 15, 16.5 days in PBS, CTL ADC treated mice and all T-DXd treated mice were alive after 30 days (p=0.0002). No significant toxicity was observed with T-DXd.

Conclusion: T-DXd showed in vitro and in vivo preclinical efficacy in HER2 overexpressing EOC. Further clinical trials are warranted.

16. Allogeneic T cells and NK cells infiltrate and target ovarian cancer cells in a three-dimensional spheroid model

Erin Lips MD, Nicole James PhD, Jennifer Ribeiro, PhD

Objective: To develop and validate a novel ovarian cancer three-dimensional (3D) immune oncology co-culture model consisting of ovarian cancer spheroids and immune cells.

Methods: SKOV3 and OVCAR8 cells were grown in 96-well U-bottom microplates. Peripheral blood mononuclear cells (PBMCs) were added and confocal microscopy of live, labeled cells was performed to visualize PBMC migration and spheroid invasion. Flow cytometry was performed to determine spheroid viability over time and expression of immune factors MHC-I and PD-L1 on spheroid cells. Cancer cell death resulting from immune cell co-culture was quantified by propidium iodide immunofluorescence and 3D viability assay and compared to control spheroids in the absence of PBMCs. Cell death resulting from co-culture with normal natural killer (NK) or CD3+ T cells with addition of IL-2 or T cell activator Dynabeads® was quantified along with percentage of interferon-gamma (IFNγ) positive cells. Finally, IFNγ monoclonal antibody was employed to determine effect of IFNγ blocking on spheroid death.

Results: Spheroids became compacted after 48-72 hours and demonstrated proliferation and viability over one week of culture. Live imaging of spheroids co-cultured with PBMC revealed robust invasion of the spheroids, which increased with increasing PBMC numbers and time. Immune cell killing of cancer cells was increased compared to controls for both SKOV3 and OVCAR8 regardless of MHC-I status. NK cells and CD3+ cells induced spheroid death, enhanced by addition of IL-2 and/or T cell activator Dynabeads®, and abrogated by addition of IFNγ blocking antibody. Spheroid cell death was commensurate with IFNγ production by immune cells.

Conclusion: Our findings demonstrate feasibility and reproducibility of an ovarian cancer 3D immune oncology co-culture model. As compared to traditional 2D tissue culture, this new technique may offer a more physiologic representation of cancer and its interaction with the immune system, which may improve preclinical study of cancer and antineoplastic agents.

17. Ovarian and uterine carcinosarcoma cell lines show preclinical sensitivity to Elimusertib, a novel ataxia-telangiectasia and Rad3-related (ATR) kinase inhibitor therapy

Diego D. Manavella, Justin Harold, Stefania Bellone, Eric. E Siegel, Tobias Philip Max Hartwich, Yang Yang-Hartwich, Luca Zammataro, Levent Mutlu, Gary Altwerger, Gulden Menderes, Elena Ratner, Gloria S. Huang, Gary Mitchell Clark, Vaagn Andikyan, Masoud Azodi, Peter E. Schwartz, Ludmil B. Alexandrov, Alessandro D. Santin

Background and Objective: Carcinosarcomas (CS) of the gynecologic tract are highly aggressive malignancies poorly responsive to currently available adjuvant treatment. Elimusertib is a selective Ataxia telangiectasia and Rad3-related (ATR) kinase inhibitor that has proved strong monotherapy efficacy in models that carry DNA damage repair deficiencies, such as homologous recombination deficiency (HRD). The aim of this study was to test in vitro and in vivo preclinical activity of Elimusertib in CS cell lines and xenograft models.

Methods: Sensitivity to Elimusertib was evaluated in vitro against 9 fully whole exome-sequenced (WES) primary CS cell lines. Elimusertib antitumor activity was tested in vivo against an HRD CS xenograft model. Western blot was carried out to determine baseline ATR and p-ATR protein expression for all CS cell lines, and ATR pathway downstream effectors and apoptosis markers in an OCS HRD cell line after treatment with Elimusertib.

Results: Three of nine primary fully WES CS cell lines carried the HRD signature. Eighty five percent of all CS cell lines were sensitive to Elimusertib in vitro. Elimusertib showed activity against all HRD CS cell lines (mean IC50 + SEM HRD= 64.44 nM + 15.18 vs HRP = 147.2 nM + 68.7). In vivo, Elimusertib showed significant tumor growth inhibition in HRD CS xenografts ($p<0.0001$) and increased overall survival ($p<0.0001$). No significant toxicity was observed. Western blot showed a higher baseline ATR and p-ATR protein expression in HRD CS cell lines. A dose-dependent inhibition of ATR, p-ATR and p-CHK1 after treatment, and an increase in Casapase-3 expression after 24h and 48h was also evidenced.

Conclusions: All HRD CS cell lines are sensitive in vitro to Elimusertib. Furthermore, in vivo primary HRD OCS xenografts are also responsive to selective ATR inhibition with this agent, with overall survival benefit. Elimusertib may represent a potential novel treatment option for carcinosarcoma patients.

18. Circulating immune checkpoint receptors and cytokines are associated with improved patient prognosis in high grade serous ovarian cancer

Katrin Eurich, Amanda Laguna, Erin Lips, Payton De la Cruz, Morgan Woodman, and Nicole E James and Jennifer R Ribeiro

Objective: While HGSOC patients have shown poor immunotherapy responses, prior studies have demonstrated that intratumoral immune factors are associated with improved clinical outcomes. However, little research thus far evaluates if immune based markers in HGSOC can be detected peripherally. This current study sought to evaluate if circulating immune factors are indicative of HGSOC prognosis.

Methods: 79 serum HGSOC were obtained from the Department of Special Testing and the Program in Women's Oncology Gynecologic Tissue Bank at Women and Infants Hospital. Levels of immune checkpoint receptors LAG-3 and PD-1 were obtained via commercially available ELISA kits. 1. A 48-plex cytokine/chemokine multiplex array was employed to detect broad immunologic changes in 92 treatment naïve serum samples. This study was approved by the Women and Infants Institutional Review Board.

Results: Kaplan Meier curve analysis demonstrated longer progression-free interval (PFI) in patients with higher pre-treatment LAG-3 concentrations stratified by both median (HR=0.4480, log-rank p=0.0056) and quartile LAG-3 serum levels (HR=0.4253, log-rank p=0.0313). Higher pre-treatment serum PD-1 levels were found to be statistically significantly associated with an improved PFI when stratified by median (HR=0.3721, log-rank p=0.0031) and quartile (HR=0.4256, log-rank p=0.0271).Upon stratification of patients by chemoresistant versus chemosensitive disease, it was revealed that patients with a PFI of 6 months of less had a significantly (p=0.0032) lower mean rank of pre-treatment serum LAG-3 when compared to patients with a PFI of 18 months or greater. Multiplex array results demonstrated a significantly improved PFI in patients with higher pre-treatment serum IL-17F, sCD40L, and Eotaxin.

Conclusion: These findings demonstrate that circulating immune factors possess prognostic capabilities in HGSOC. Future directions include performing logistic regression to develop a multidimensional immune prognostic marker from our current candidates of interest.

19. A Low-Cost Educational Platform for Teaching Advanced Communication Skills to Trainees

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Objectives: Advanced Communication Skills (ACS) improve patient-centered care and satisfaction. WeTalk and VitalTalk are programs to teach ACS. However, cost, time constraints, and travel restrictions present barriers to widespread use. We evaluated trainee satisfaction with ACS after a workshop utilizing improvisational theater methods and actors.

Methods: An ACS training module for Ob/Gyn trainees was developed based on WeTalk and VitalTalk to communicate bad news, respond with empathy, elicit patient values, and conduct shared decision-making. The 4-hour session includes a 30-minute introduction to breaking bad news and responding to emotion. Trainees practiced in smaller sessions (3-4 trainees, 1-2 faculty, 1 actor). 2/3 faculty were formally trained in ACS. Actors trained in improvisation modulated their display in response to how trainees employed ACS techniques. Cases included ovarian cancer recurrence, ureteral injury, and preterm labor. COVID-specific training included Zoom communication with masks. Pre/post session surveys were administered to ascertain comfort. The program cost was limited to actor's fees, faculty time, and food.

Results: 15 trainees participated from Jan. 2020 to Sept. 2021. All completed at least one survey. On pre-assessment, 66% had ACS education, 94% occurring in medical school, 7% in residency. Mean pre-workshop ACS comfort level (scale 1-10, 10 = most comfortable): breaking bad news (5.8), code status (4.5), difficult topics (5.4), hostile family members (4.4). For the group that participated twice, 10 months apart, pre-workshop comfort with code status increased from 3.6 to 5.6 (57% increase). 100% of trainees felt better about their ACS after the workshop. 60% felt they had room for growth and 75% of participants requested further sessions with improvisation.

Conclusions: An ACS course targeted at OB/Gyn trainees, utilizing local actors and ACS-trained faculty, is feasible without being cost-prohibitive. Trainees report increased comfort, which is retained 10 months later. When cost, time and travel barriers limit wide-spread access to formal ACS courses, this introductory workshop can increase trainee comfort with ACS and spark interest in further learning.

20. The Impact of a Robotic Simulation Program for Ob/Gyn Residents on Surgical Operative Experience during Robotic Assisted Hysterectomy

Alicia M Youssef, M.D.; Jessica DiSilvestro, M.D., Merima Ruhotina, M.D., Kyle Wohlrab, M.D.

Objective: To determine whether residents who have completed robotic simulation modules perform more components of a robotic hysterectomy compared to residents who have not utilized the robotic simulator.

Methods: A pilot prospective cohort study was conducted of Obstetrics & Gynecology (Ob/Gyn) residents with access to a robotic simulator over a two-year period. We divided the robotic hysterectomy into a 14-step procedure. After a robotic hysterectomy, we collected self-reported questionnaires assessing the level of involvement in the surgery, amount of time spent on a robotic simulator, and perceived comfort performing the surgery. Results were analyzed using Spearman's rank correlation.

Results: Twenty-one surveys were completed by eleven residents between December 2020 and February 2022. Eighteen of the questionnaires were completed by senior residents (PGY3 and 4). Residents spent a variety of time practicing on the robotic simulator with majority of residents (n=9) utilizing the robotic trainer for 1-3 hours. Residents reported that they did not complete any of the steps in 43% of robotic hysterectomies. Residents completed 1 to 3 steps in 52% of robotic hysterectomies. One resident completed 7 steps of the hysterectomy. Residents who spent more time on the robotic simulator completed more steps of the hysterectomy ($\rho=0.51$, $p<0.01$). The majority of residents (80%) felt that they could have done "slightly more" or "significantly more" during the case, whereas 14% reported they completed an "appropriate" amount. Eighty-two percent of residents plan to incorporate robotic surgery into their future practice.

Conclusion: Ob/gyn residents who spent more time on a robotic simulator completed more steps in a robotic hysterectomy compared to those with less simulator time. The majority of residents plan to incorporate robotic surgery into their future practice, therefore additional efforts should be made to enhance resident operative experiences.

21. Treatment Delays Due to COVID-19 Infection in Gynecologic Oncology Patients

Jason Silberman, MD; Lauren Philp, MD; Kaitlyn James, PhD ; Thomas Randall, MD

Objectives: To investigate the rates and duration of treatment delay in patients with gynecologic malignancies who were concurrently diagnosed with COVID-19.

Methods: Using the Research Patient Data Registry (RPDR) tool, we queried patients with an ICD-10 code inclusive of gynecologic malignancy and a concurrent positive SARS-CoV-2 PCR test between March 2020 – May 2021. Treatment delays were determined through chart review. Patient demographics, details regarding upfront vs. palliative treatment, treatment modality (chemotherapy, radiation, or surgery), and outcome of COVID-19 infection were also recorded.

Results: A total of 98 patients were identified. After excluding patients who received care at a non-affiliated hospital (n=4), and who were not actively receiving treatment for their gynecologic malignancy (n=67), 27 patients were included in our cohort. The average age of our cohort was 65 (range 34 -86). Fourteen patients had a diagnosis of uterine cancer, 9 had ovarian cancer, 2 had cervical cancer and 2 had vulvar cancer. Eleven of the 27 patients (40.7%) were undergoing upfront treatment, while the remainder were receiving palliative treatment (59.3%). Overall, 18 patients (66.7%) experienced a treatment delay due to COVID-19 infection. Fourteen patients had a delay in chemotherapy (77.8%), 3 patients had a surgical delay (16.7%), and 1 patient had a delay in radiation therapy (5.5%). The average chemotherapy delay was 13.6 days (range 6-22 days), and one patient never initiated treatment as she died from her COVID-19 illness. Eight patients in the cohort were hospitalized due to their COVID-19 infection, and 2 patients subsequently died due to infection.

Conclusion: Patients diagnosed with COVID-19 infection while undergoing treatment for gynecological cancer experienced frequent treatment delays. These delays occurred in both patients who required hospitalization due to COVID-19, as well as in those who had mild disease. Further studies are required to assess whether these delays are clinically significant.

22. HPV point of care testing for cervical cancer screening

Ilana Cass MD, Jessica Bentz MD, Evelyn Fleming MD, Ivy Wilkinson-Ryan MD, Loyd West MD, Amogha Tadimety PhD, Alison Burklund PhD, Gregory J. Tsongalis MD

Objective: Cervical cancer is the fourth leading cause of cancer in women globally and represents 7.5% of all female cancer deaths. Persistent HPV infection is the primary driver of these cancers. HPV detection for cervical dysplasia outperforms pap smears, however the cost and turn-around time of primary HPV testing technologies are obstacles in many healthcare settings. This results in under- or no screening, and patient avoidance due to discomfort or inconvenience. Here we provide a proof of principle study for a novel device for point-of-care HPV genotyping.

Methods: A single-use assay cartridge coupled to a low-cost, portable readout machine was designed by Nanopath to detect HPV. In the assay cartridge, cell-free HPV DNA binds selectively to an engineered nanosensor that is functionalized with probes complementary to target high-risk HPV specific sequences. The wavelength shift of the absorbance peak (i.e. color change) is linearly related to the concentration of bound DNA.

Results: Processed cervical swabs were examined in 50 women presenting to clinics in New Hampshire, Kosovo and Honduras using the Nanopath detection system. Results were compared to the gold standard HPV detection using PCR on DNA isolated from cervical cells. In this pilot study, the Nanopath system demonstrated 92% sensitivity and 100% specificity for both single-genotype identification (HPV16) and pooled high-risk HPV genotyping after a five minute sample incubation time with Nanopath's sensor.

Conclusion: Our early data support the promise of this platform for point-of-care HPV genotyping, and we are working to optimize and validate this system for non-invasive screening for high-risk HPV from a urine sample. This will enable clinicians and community healthcare workers to effectively screen more women, without a pelvic exam, which can be uncomfortable and invasive. It may also allow healthcare providers to implement a screen-and treat protocol for pre-cancerous lesions within a single office visit.

23. Gynecologic Oncology & Global Surgery: A Call to Action

Parisa Fallah, Michael Muto

Objective: Five billion people worldwide lack adequate access to basic surgical care. Of the 15 million new cancer patients each year, 80% will require surgical care, but only 25% will receive it. With the high burden of gynecologic malignancies and increased mortality amongst women in low-resource settings, gynecologic oncologists have significant potential to contribute to global surgery efforts; however, there is currently little involvement from our subspecialty. It is critical to engage trainees early on to learn more about global surgery and to incorporate it into their academic careers.

Methods: In 2017, we developed a national organization called the Global Surgery Student Alliance (GSSA). This was a grassroots effort directed towards medical students and residents interested in global surgery. Starting in Boston, we then expanded to medical schools around the U.S. and connected with a larger network of students around the world. We instituted multiple educational initiatives, spanning from national conferences to curriculum development to recorded video series.

Results: Within 5 years, GSSA chapters developed at over 75 medical schools. Through association with our international counterpart (InciSioN), we have connected with students from over 40 countries. Students from GSSA chapters have since gone into a wide variety of specialties, including General Surgery, OB/GYN, Anesthesiology, and other surgical subspecialties. Increasing attention is now being put towards OB/GYNs as critical surgical providers within global surgery efforts, and many of those in residency and gynecologic oncology fellowship are beginning to turn their attention towards work in health equity.

Conclusion: There is a significant need for gynecologic oncologists in global surgery, and there is rising interest among trainees. By increasing exposure and education about global surgery efforts, we can work towards improving engagement in this field and further addressing morbidity and mortality from gynecologic cancers worldwide.

24. NCCN Guideline-Discordant Care in Early-Stage Vulvar Cancer: A National Cancer Database Study

Alexandra Bercow MD, Alexander Melamed MD MPH, Whitfield Growdon MD, Eric Eisenhauer MD, Amy Bregar, George Molina MD MPH, Christina Minami MD MS

Objective: To define the rate of National Comprehensive Cancer Network guideline-concordant inguinofemoral lymph node evaluation (LNE) in women with stage IB vulvar squamous cell carcinoma (SCC) and patient as well as hospital characteristics associated with low rates of utilization.

Methods: Between 2012-2018, women with stage IB vulvar SCC were identified using the National Cancer Database. Patient, facility, and disease characteristics were compared between those who underwent LNE and those who did not. Factors associated with LNE were examined using logistic regression analyses, adjusting for a priori selected covariates. Kaplan-Meier survival analysis using log rank test and Cox regression analyses were performed for the entire cohort and an elderly subgroup.

Results: Of the 3,532 patients, 68.1% underwent LNE with 48.2% undergoing only IFLD and 19.8% SLNB. On multivariable analysis, age ≥80 (OR 0.32, 95%CI 0.22-0.44) and Black race (OR 0.67, 95%CI 0.47-0.93) were associated with lower rates of LNE. Intermediate (OR 1.35, 95%CI 1.08-1.70) and high (OR 1.68, 95%CI 1.29-2.19) volume hospitals were associated with higher rates of LNE compared to low-volume hospitals. Given women ≥80 years old were less likely to undergo LNE, we examined the survival differences in this subgroup by categorizing them as having deferred LNE, having undergone LNE with pathologically negative lymph nodes (LN), or having undergone LNE with positive LN. After controlling for patient, treatment, and disease characteristics, elderly women who deferred LNE had a significantly worse OS than those with pathologically negative LN (HR 0.46, 95%CI 0.36-0.58) and similar OS as those with pathologically positive LN (HR 1.17, 95%CI 0.78-1.76).

Conclusions: The national rate of guideline-concordant LNE for stage IB vulvar SCC is low at 68.1% and lower rates are associated with older age, Black race, and low-volume hospitals. There was no difference in OS in elderly patients who did not undergo LNE compared to those who did with pathologically positive LN. If elderly women with vulvar cancer are being undertreated to improve all-cause mortality, the desired effect is not realized.

25. Association between travel distance to treatment facility and palliative therapy use for patients with advanced stage ovarian cancer

Elizabeth V. Adams, MD, Benjamin A. Sweigart, MA, Sarah E. Paraghamian, MD, John O. Schorge, MD

Objective: To determine the association between travel distance to treatment facility and use of palliative therapies for patients with stage III and stage IV ovarian cancer.

Methods: We identified patients with FIGO stage III and IV ovarian cancer in the National Cancer Database (NCDB) diagnosed from 2004 to 2016. We determined if a patient received any palliative therapy, defined by NCDB as non-curative treatment including surgery, radiation, chemotherapy, and pain management or any combination. Patients identified as having received palliative care may have also concurrently undergone curative treatment. We used mixed effects logistic regression to examine the association between quartiles of travel distance and palliative care use, adjusting for age, race, insurance status, and metropolitan/urban/rural setting.

Results: A total of 110,851 patients were identified. Two percent of patients with stage III and 8% of patients with stage IV ovarian cancer received some form of palliative therapy. Longer travel distance was significantly associated with less palliative care use for patients with both stage III and IV ovarian cancer. Compared to the nearest quartile of travel distance, the adjusted odds ratios (aOR) for palliative care use in 2nd, 3rd, and 4th quartiles for travel distance were 0.91 (95% CI 0.79-1.05), 0.74 (95% CI 0.64-0.87), and 0.64 (95% CI 0.53-0.78) respectively among stage III patients and 1.06 (95% CI 0.86-1.18), 0.93 (95% CI 0.83-1.04), and 0.75 (95% CI 0.66-0.86) among stage IV patients. Patients in the farthest quartile of travel distance were less likely to have received palliative chemotherapy/hormone therapy with aOR of 0.41 (0.28-0.61) for stage III and aOR of 0.80 (95% CI 0.65-0.99) for stage IV.

Conclusion: Compared to patients in the nearest quartile of travel distance, patients with stage III and stage IV ovarian cancer with farther travel distances for treatment had significantly decreased use of palliative therapies.

26. Healthcare cost trends highlight evolving disparities in endometrial cancer care: a database study.

Manning WB; Eurich K, Miller K

Objective: Prior research shows that endometrial cancer disproportionately affects lower socioeconomic (SES) populations. This study aims to describe trends in healthcare costs and utilization among patients with endometrial cancer. Specifically, the study describes rates of endometrial cancer by geographic region, differences in primary insurance payer-type in endometrial cancer hospitalizations, and overall costs associated with the care of endometrial cancer patients.

Methods: The Healthcare Cost and Utilization Project (HCUP) database was queried for inpatient healthcare cost and admission data for patients with endometrial cancer from 2005-2018. Data was collected on hospitalization cost, payer type, length of stay, median income, and healthcare region. Results were queried for overall trends. Data was collected from a public de-identified database and IRB approval was not required.

Results: From 2008-2018, the proportion of endometrial cancer hospitalizations paid for by Medicaid and Medicare patients increased from 47.1% to 62.9% while the proportion covered by private insurance decreased from 46.9% to 31.7%. While costs associated with endometrial cancer rose throughout the country, the largest percentage increases were noted in the South (141%) and Midwest (126%) regions of the US. Overall, the rates of hospital admissions have decreased while the overall cost of care for endometrial cancer has risen.

Conclusion: The combination of increased coverage by Medicare/Medicaid, rising costs with concurrent decreased admission rates, and regional differences in costs suggest a continued trend of increased effects on lower socioeconomic status populations. The rising costs combined with decreased hospital admission rates suggest delayed diagnosis and treatment in these populations, as advanced stage is associated with more costly treatments.

27. The impact of primary language on endometrial cancer outcomes.

Mackenzie Cummings, MD, Olivia Nicolais, MD, Tanvi Joshi, MD, Elizabeth R Burton, MD, Mitchell I Edelson, MD, Mark S Shahin, MD, Joel I Sorosky, MD, Tommy R. Buchanan Jr., MD

Objective: Non-English speaking patients (NES) have multiple barriers to care that may potentially contribute to disparities in cancer outcomes including race, ethnicity, and lower socioeconomic status. The objective of this study was to examine the impact of primary language on endometrial cancer outcomes.

Methods: This is a single institution retrospective cohort study comparing outcomes of NES versus English speaking (ES) patients diagnosed with endometrial cancer over a 5 year period (2013-2017). Chi squared analyses with 95% confidence intervals were performed to assess for significant differences between cohorts.

Results: The preliminary analysis yielded 10 NES and 296 ES patients. There was no difference in age, stage, grade, or histology between cohorts. There was no difference in initial treatment (surgery versus chemotherapy or radiation) between cohorts. Distribution of race was statistically different between cohorts where NES patients were less likely to be white, 50% vs. 85%, and more like to be Asian, 30% vs. 2%, or Other race, 20% vs. 2% ($p<0.001$).
NES patients were more likely to be uninsured, 20% vs. 1%, or have public insurance, 40% vs. 10% ($p<0.001$). Mean time from initial presentation to initiation of treatment was 45 days (standard deviation (SD) 30.7) in the NES cohort and 76 days (SD 77.90) in the ES cohort. Mean time to recurrence was 11.7 months (SD 1.5) in the NES cohort and 21.6 months (SD 21.6) in the ES cohort. Mean time of death from initial treatment was 13.2 months (SD 3.3) in the NES cohort and 35.8 months (SD 29.2) in the ES cohort. Median overall survival was 50.5 months in the NES cohort and 84.3 months in the ES cohort.

Conclusion: Primary language may be a negative risk factor for recurrence, death, and overall survival. These data should encourage further exploration into the cause of poorer outcomes in NES patients.

28. Cervical cancer screening and follow-up on abnormal screens in perinatal patients with Opioid Use Disorder

Courtney Knill, MD, Catherine Pollack, BS, PhD, Daisy Goodman, DNP, CNM, MPH, and Ilana Cass, MD

Objective: Opioid Use Disorder (OUD) is associated with an increased risk of cervical cancer, yet people with OUD are less likely to undergo appropriate cervical cancer screening. Since interaction with the healthcare system increases drastically during pregnancy, this study evaluates whether patients with OUD were up to date on recommended screening at initiation and/or completion of perinatal care, and whether patients with abnormal screening results complied with American Society for Colposcopy and Cervical Pathology (ASCCP) follow up recommendations.

Methods: We conducted a retrospective cohort study of 810 patients receiving prenatal care at a single rural tertiary medical center, 132 with and 678 without diagnosis of OUD. Multivariable logistic regression was used to assess the relationship between OUD diagnosis and cervical cancer screening status, adjusting for potential confounders.

Results: Patients with OUD were less likely than patients without OUD to be up to date on cervical cancer screening at the start (36% vs 53%, OR 0.49, CI 0.32-0.72) and the conclusion of perinatal care (82.6% vs 90.7%, OR 0.50, CI 0.29-0.87). Patients with OUD were also significantly more likely to have an abnormal pap smear, 30% versus 7% ($p=< 0.001$). Among those with abnormal results, both groups were equally adherent to recommended follow up care ($p = 0.29$).

Conclusion: Perinatal care offers an important opportunity to improve cervical cancer screening for patients with OUD. This high risk population is historically more difficult to engage in screening and have higher incidence of cervical disease. Once patients with OUD undergo screening, they are more likely to have an abnormal result but are equally compliant with ASCCP recommended follow up.

29. Financial Toxicity in BRCA1 and BRCA2 carriers: A pilot study

Ellie M Proussaloglou, Alex E Rosenthal, Christina Raker, Jennifer Scalia Wilbu1, Katrin E Eurich, Ashley Stuckey, and Katina Robison

Objective: Financial Toxicity (FT), the individual financial burden due to medical care, is a well-established phenomenon in patients with cancer. BRCA1/2 mutation carriers who have genetic predisposition to cancers require frequent screening and prophylactic treatments, placing them at high risk of FT. The primary aim in this study was to describe rates of FT among BRCA carriers.

Methods: We recruited patients via phone and/or email for this novel, cross-sectional study; participants consented and completed surveys on RedCap. The Comprehensive Score for Financial Toxicity (COST) tool, a validated instrument measuring the economic burden of cancer care, was used to assess FT. High FT was defined as COST score < 24.

Results: 265 BRCA positive patients assigned female at birth met enrollment criteria. 28.7% completed the survey. Respondents were primarily non-Hispanic White (97.4%), privately insured (82.9%), employed full time (67.1%) with an annual income of $50,000-$99,000 (40.8%), and a mean age of 46.4 years. 77.6% of patients reported undergoing prophylactic surgery. 22.7% of participants reported delaying or avoiding care because of financial concerns. 58% of patients wanted to know about the out-of-pocket costs of treatments before receiving them, however only 7.7% reported that cost was discussed. No statistically significant difference in annual income, insurance type, marital status, or race was seen between the high and low/medium FT groups. Patients with high FT were more likely to engage in cost-saving measures, with 41.7% (p=0.02) of patients in this group reporting delays/avoidance of care due to cost. Patients with high FT were also more likely to borrow money (16.7%, p=0.01), use savings for care (54.2%, p=0.04), and reduce spending on necessities (37.5%, p=0.03) and leisure activities (58.3%, p=0.01).

Conclusion: This is the first study to demonstrate the impact of FT in BRCA carriers and supports initiation of routine counseling on cost of cancer screening and prevention.

30. Preferred Cost Communicator in BRCA Mutation Carriers

Ellie M Proussaloglou, MD, Allan Huang, MD, Alex Rosenthal MD, Christina Raker, ScD, Jennifer Scalia Wilbur, MS, Katrin E Eurich, MD, MPH, Ashley R Stuckey, MD, Katina M Robison, MD

Objective: Financial Toxicity (FT), the cumulative financial burden experienced by patients due to medical care, is a significant adverse outcome of treatment. As a result, physicians have been encouraged to discuss FT with their patients, but data on patient preference is limited. This analysis examines BRCA mutation carriers' preferences related to communication about costs of care.

Methods: This abstract represents a subanalysis of our cross-sectional study of FT in patients with BRCA1/2 mutations. Patients were recruited via phone and/or email; participants completed consents and surveys on RedCap. The COST tool, a validated measure, was used to assess FT. COST scores were divided into tertiles, with high FT defined as COST score < 24. Cost communication preferences, demographics, and medical history were also assessed.

Results: 76 female patients completed the survey. Most patients (58.9%) responded that they would like to know the out-of-pocket (OOP) costs of their treatment beforehand. Most patients (32.8%) preferred to speak with a financial counselor, with 27.6% preferring a physician. Between high FT (n = 23) and low/medium FT groups (n = 39), no differences were seen in desire to know OOP costs beforehand (60.9% vs 59%, p = 0.61). Preferred cost-communicator did not differ statistically between FT groups but a trend was seen with high FT patients preferring to speak with a physician about cost of care (31.8% vs 30.8%, p = 0.16). In contrast, patients with low FT were more likely to want to speak to a financial counselor (35.9% vs 27.3%) or social worker (20.5% vs 9.1%) about costs.

Conclusion: This is the first study of BRCA+ patients' cost communication preferences. Patients' cost communicator preference for financial counselors, regardless of their FT severity, indicates that multidisciplinary teams may be beneficial for addressing questions about the costs of care.

31. Efficacy of Pembrolizumab in Combination with Bevacizumab and Oral Metronomic Cyclophosphamide in the Treatment of Platinum Resistant Recurrent Ovarian Cancer: A Retrospective Observational Study.

Alexandra R. Steck, Jovana Y. Martin, Timothy J. McElrath, Patrick F. Timmins III, Joyce N. Barlin

Objective: To report on the efficacy of pembrolizumab, bevacizumab, and oral metronomic cyclophosphamide used in combination for patients with platinum resistant recurrent ovarian cancer in community practice.

Methods: This retrospective observational study was conducted at a single gynecologic oncology practice in Albany, NY. Patients that met eligibility criteria as determined by the Roswell Park Phase II clinical trial received intravenous pembrolizumab (200 mg) and bevacizumab (15 mg/kg) every 3 weeks, with oral cyclophosphamide (50 mg) once daily during the treatment cycle until disease progression, toxicity, or withdrawal of consent.

Results: Nineteen patients with platinum resistant ovarian cancer were included. The median age was 62 years. Twelve patients were diagnosed with ovarian cancer, 6 with fallopian tube cancer, and 1 with peritoneal cancer. There were 17 high grade serous and 2 clear cell cancers. Of the 19 patients studied, 10 had Stage IIIC disease at diagnosis. Three women were PD-L1 positive, 9 were PD-L1 negative, and 7 had unknown PD-L1 status. The median number of prior lines of treatment was 4 (range 2-9). Four patients had partial responses, 4 had stable disease, and 11 had no response. The objective response rate was 21.1 percent, and the total clinical benefit rate was 26.3 percent. The median progression free survival was 4.0 months, and the overall survival was 17.0 months. The most common adverse events were fatigue (47.4%), nausea (31.6%), and abdominal pain (26.3%).

Conclusion: The combination of pembrolizumab, bevacizumab, and oral metronomic cyclophosphamide was well tolerated and demonstrated a 21.1 percent response rate in a heavily pre-treated platinum resistant ovarian cancer population. This combination warrants further study.

32. CA-125 monitoring in Gynecologic cancer patients receiving COVID-19 vaccines: are post-vaccination levels reliable?

Elizabeth Thayer, MD; Lindsay Walsh, BA; Katherine Leung, MPH; Sharmilee Korets, MD

Objective: The COVID-19 vaccine is known to instigate an inflammatory response that can impact cancer testing. We aim to evaluate carbohydrate antigen 125 (CA-125) trends in Gynecologic oncology patients following COVID-19 vaccination to better guide clinical management of patients as the effects of the pandemic continue.

Methods: This was a retrospective study of patients who received a COVID-19 vaccine while undergoing surveillance of Gynecologic cancers with serial serum CA-125 measurements at a single institution from March 2020 through July 2021. Patients were excluded if they were undergoing initial treatment or had disease progression during the study period. CA-125 levels from the three months before and after vaccination were included in analysis. The difference between mean pre- and post-vaccination CA-125 levels for each patient was calculated. The mean and median of these differences were calculated, as well as the distribution of change in means pre- and post-vaccination. Demographic and cancer-related variables were also recorded.

Results: Twenty-six patients were identified who received a COVID-19 vaccine and who were followed with surveillance serum CA-125 levels. The mean age was 68.2 years and the majority received a two-vaccine series (65% Pfizer and 27% Moderna). Forty-six percent had endometrial cancer and 54% had ovarian cancer. The most common histologies were serous (38%) and endometrioid (31%). The mean change from pre- to post-vaccine CA-125 level was 0.0035 (±7.45) U/mL. The median was -0.38 U/mL with an interquartile range of 4.31 U/mL. The range in change from pre- to post-vaccine mean was -19.33 to 24.00 U/mL, although 58% patients fell between -2 and +2 U/mL.

Conclusion: We found no clinically significant change in mean CA-125 level after patients who were under surveillance for Gynecologic cancers were vaccinated against COVID-19, suggesting that that the vaccine does not impact the utility of CA-125 as a tool to monitor disease.

33. Patient-reported drivers of financial toxicity in gynecologic cancers: A focus group study

Kaitlin M Nicholson, MD, Rasha Baig, Sarah Gladstone, Christine Sweeney, LICSW1, Michele R Hacker, ScD, MSPH, Laura E. Dodge, Katharine M Esselen, MD

Objective: Our aims were to understand how treatment-related financial burden affects patients with gynecologic cancer and to identify targets for interventions to reduce financial toxicity (FT).

Methods: Patients with gynecologic cancer were invited to participate in a qualitative focus group study. Each participant completed an online, secure survey that included questions regarding diagnosis, treatment, employment status, and income. The Comprehensive Score for Financial Toxicity (COST) tool was used to measure economic burden (COST score 0-44), with lower scores indicating worse FT. Each participant then took part in a virtual semi-structured focus group with a social worker and a study staff member. Three investigators independently analyzed the transcripts for common themes and reconciled disagreements through consensus.

Results: Over 60% of participants had private insurance and 54% had moderate to high FT (COST scores <26). The five most commonly discussed themes included extent of insurance coverage, out-of-pocket health expenses, employment status changes, health system inefficiencies, and opportunity costs. Minor themes included issues surrounding delayed care, parking and transportation, and provider conversations. Participants with moderate to high FT reported strain associated with employment status changes, opportunity costs, and health system inefficiencies more often than those with mild FT.

Conclusions: Our findings suggest that patient-centered interventions to optimize insurance coverage and enhance care coordination may reduce FT. Both targets are potentially immediately actionable and could have downstream effects on health outcomes. Meanwhile, advocacy efforts to improve work leave policies and reduce out-of-pocket health expenditures are system-level interventions that also should be considered to curtail FT.

34. Risk factors and impacts of financial toxicity in patients with gynecologic cancer

Annika Gompers, Rasha Baig, Joanne Jang, Meghan Shea, Michele R. Hacker, Katharine M. Esselen

Objective: Financial toxicity (FT) impacts up to 50% of patients with gynecologic cancer and is associated with worse health and quality of life. We combined two cohorts of patients with gynecologic cancer to assess risk factors and impacts of FT.

Methods: Patients with gynecologic cancer were recruited from 2017 to 2021 to complete a survey that included the COmprehensive Score for Financial Toxicity (COST) tool and questions about cost-coping strategies. We designated three levels of FT: mild (COST scores >25), moderate (scores >13 and ≤25), and severe (scores ≤13). We used Poisson regression to estimate risk ratios and 95% confidence intervals (CI).

Results: Among 312 respondents, those with severe and moderate FT were younger, more likely to self-identify with a minoritized racial/ethnic category, have less education, be unemployed, not have Medicare, and have lower household incomes than those with mild FT (all $p \leq 0.03$). A higher proportion of respondents with severe and moderate FT had stage III or IV cancer and underwent chemotherapy (both $p \leq 0.04$). Respondents with severe or moderate FT were more likely to use cost-coping strategies, including using savings, applying for financial assistance, and reducing spending on basics and leisure (all $p < 0.001$). After adjusting for insurance, respondents with moderate FT were 2.1 (95% CI: 0.99-4.7) times more likely and those with severe FT were 5.3 (95% CI: 2.6-10.9) times more likely to delay or avoid medical care than those with mild FT. This includes filling prescriptions, buying medications, attending medical visits and receiving treatment.

Conclusion: Among patients with gynecologic cancer, FT was associated with several sociodemographic and disease factors. Respondents with moderate and severe FT were more likely to utilize concerning cost-coping strategies that may harm their health outcomes. More work is needed to identify interventions to ameliorate the impacts of FT in this population.

35. Impact of out-of-pocket payments and bad debt write-offs on financial toxicity in patients with gynecologic cancers.

Rasha A. Baig, Annika Gompers, Kaitlin Nicholson, Michele R. Hacker, Katharine M. Esselen

Objective: Our objective was to explore the association of financial toxicity (FT) to hospital expenses incurred by patients with gynecologic cancer.

Methods: We abstracted hospital finance data from patients surveyed in our prior FT studies from October 2017 to July 2021. This included out-of-pocket (OOP) payments and bad debt write-offs in the year before completion of the survey. Prior survey and medical record data were integrated, including the Comprehensive Score for Financial Toxicity (COST) score, demographics, and disease and treatment variables. The COST score, ranging from 0-44, was categorized as severe (≤13), moderate (14-25), and mild (>25) FT.

Results: The median (interquartile range) COST score among 323 participants was 29 (22–36). Over 50% of participants were privately insured and 38% had Medicare. OOP payments were paid by 63% of participants and of those with any OOP costs, the moderate FT group had the highest median OOP cost [$799 ($246–$2,004)] followed by the mild [$279 ($90–$947)] and severe FT groups [$223 ($85–$1,469)] (p=.01). Those with OOP costs were more likely to have private or no insurance (p<0.001). The severe FT group (46%) had the highest proportion of participants with any bad debt write-off followed by the moderate (45%) and low FT group (31%; p=0.03). The severe FT group had the highest median write-offs [$360 ($110-$827)] followed by the moderate [$57 ($10–$251)] and mild groups [$40 ($15–$272)] (p=.02).

Conclusion: Our findings suggest that those with moderate FT are at risk for the highest OOP payments, while those with the most severe FT are less able to pay for their care and incur bad debt. Further investigation is needed to better understand the source of higher OOP payments and whether these costs are drivers of a patient's financial hardship so that appropriate interventions may be designed.

36. Non-surgical management of grade 1 endometrioid-type endometrial adenocarcinoma and endometrial intraepithelial neoplasia

M Larissa Weirich MD, Carolyn R Larkins, Wendy Craig PhD, Leslie S Bradford MD

Objectives: The purpose of the study is to explore the pathologic response rate to progesterone treatment in patients with endometrial intraepithelial neoplasia (EIN) and early stage endometrioid-type endometrial adenocarcinoma (EAC).

Methods: Retrospective chart data were collected for patients aged ≥18 diagnosed with either EIN or EAC who received primary progesterone treatment at a single institution between October 2015 and October 2020. Time to response or progression was compared using survival analysis, with Cox regression to evaluate differences between subgroups.

Results: We identified 112 women with a diagnosis of EIN or EAC who were offered primary medical management, of whom 77 met inclusion criteria and were included in final analysis. The distribution of patients with EIN (52%, n=40) was similar to those with cancer (48%, n=37). Mean age was 50 (range 25-89) and mean BMI was 50 kg/m2. The primary reasons cited for undergoing medical rather than surgical therapy were fertility preservation (33.3%, n=27) and surgical risk due to comorbidities (69.1%, n=56). Overall, 49 patients (63%) had partial or complete response, of whom 10 (20%) ultimately relapsed. The remaining 29 (37%) had stable or progressive disease. Response was more robust in patients with EIN (77%, n=31) compared with patients who had cancer (46%, n=17). In those who responded, median time to response was 5.9 months overall. Those who had evidence of progesterone effect had a shorter time to response. Predictors of response in univariate analysis included age, diagnosis, and progesterone effect but in multivariate analysis only progesterone effect remained significant.

Conclusions: With an overall response rate of 63%, our study demonstrated similar response rates to what has previously been described. Younger age was associated with increased response, but this association was not significant when controlling for diagnosis. Progesterone effect was a significant predictor of treatment response over time regardless of diagnosis.

37. Preoperative predictors of concurrent endometrial cancer in patients with endometrial intraepithelial neoplasia: Is there a role for sentinel lymph node dissection?

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Objectives: Identify preoperative factors in patients with endometrial intraepithelial neoplasia (EIN) that are associated with concurrent endometrial cancer in order to identify patients who may benefit from sentinel lymph node (SLN) assessment at the time of hysterectomy.

Methods: Retrospective single-institution cohort study of patients with a preoperative diagnosis of EIN who underwent hysterectomy with or without staging from 2010-2020. Modified Poisson regression was used to calculate risk ratios (RR) and 95% confidence intervals (CI).

Results: Of 378 patients with a preoperative diagnosis of EIN, 73% had EIN and 27% had invasive cancer on final pathology. Age (p=0.003), race (p=0.02), and hypertension (p=0.02) were significantly associated with concurrent endometrial cancer. The median preoperative endometrial stripe (EMS) was significantly greater in the endometrial cancer group [14mm (10-19)] than in the EIN group [11mm (8-16); p = 0.002]. A preoperative EMS ≥20mm was associated with double the risk of endometrial cancer on final pathology (crude RR: 2.0, 95% CI: 1.3-2.9). Of those with concurrent endometrial cancer, 5% were stage IB, 29% had tumors >2cm, and 1% had grade 3 histology. Only 3% of all patients underwent lymph node evaluation.

Conclusions: In a large cohort of patients with a preoperative diagnosis of EIN, less than one-third had invasive cancer and even fewer had pathologic features considered high-risk for nodal metastasis. Increasing EMS ≥20mm may be a useful preoperative marker to identify patients at higher risk for concurrent endometrial cancer and may be considered a criterion for use of a SLN algorithm in patients with EIN. Thickened endometrial stripe ≥20mm may also be a useful parameter for gynecologists to use as a threshold to refer to gynecologic oncologists for surgical staging.

38. Sentinel Lymph Node Biopsy Utilization in Early-Stage Vulvar Cancer: A National Cancer Database Study

Alexandra Bercow MD, Alexander Melamed MD, Whitfield Growdon MD, Eric Eisenhauer MD, Amy Bregar, George Molina MD, Christina Minami MD

Objective: To define the rate of sentinel lymph node biopsy (SLNB) utilization in women with stage IB vulvar squamous cell carcinoma (SCC) and determine patient as well as hospital characteristics associated with low rates of utilization.

Methods: Between 2012-2018, women with stage IB vulvar SCC were identified using the National Cancer Database. Patient, facility, and disease characteristics were compared between patients undergoing SLNB or IFLD. Multivariable logistic regression, adjusted for patient, facility, and disease characteristics, was used to evaluate factors associated with SLNB. Kaplan-Meier survival analysis using log rank test and Cox regression was performed.

Results: Of the 3,532 patients, 2,406 (68.1%) underwent LNE, with 1,704 (48.2%) undergoing IFLD and 702 (19.8%) SLNB. On multivariable analysis, patients diagnosed in 2014-2015 (OR 1.58, 95%CI 1.16-2.15) and 2016-2018 (OR 2.58, 95%CI 1.94-3.43) were more likely to undergo SLNB than patients diagnosed 2012-2013. Medicaid (OR 0.61, 95%CI 0.37-0.98) and uninsured (OR 0.47, 95%CI 0.22-0.97) patients experienced lower rates of SLNB than those with private insurance. Intermediate (OR 1.52, 95%CI 1.02-2.27) and high (OR 2.27, 95% CI 1.42-3.63) volume hospitals were associated with higher rates of SLNB compared to low-volume hospitals. Treatment at a minority serving hospital, defined as the top decile of hospitals serving predominantly Black or Hispanic patients, was associated with lower rates of SLNB (OR 0.39, 95%CI 0.19-0.78). After controlling for patient, tumor, and treatment characteristics, among patients with negative nodes, there was no difference in overall survival (OS) between patients who underwent only SLNB and those who underwent only IFLD (HR 0.92, 95% CI 0.70-1.21).

Conclusions: Utilization of SLNB in early-stage vulvar cancer is increasing over time but significant variation in its use exists at the patient and hospital level. The lack of survival difference between the two procedures suggests overtreatment in the 71% of node-negative women who underwent IFLD.

39. Indocyanine Green Improves Learning Curve for Sentinel Lymph Node Detection for Endometrial and Cervical Cancers

Kristen Lee Moriarty, MD, M. Heather Einstein, M.D., Xun Clare Zhou, M.D.3, Jonathan A. Cosin, MD

Objectives: Surgical staging is the most accurate method for determining the extent of disease in cervical and endometrial cancers. Sentinel lymph node (SLN) mapping was introduced in order to reduce morbidity, however, it involves a learning curve. The primary goal of this research was to institutionalize SLN mapping and to assess the learning curve.

Methods: We enrolled patients with clinically early stage endometrial or cervical cancer. Cervical injection was performed with blue dye and indocyanine green dye (If near infrared imaging (NIR) was available). SLN mapping was performed following a published algorithm. All SLN were subject to pathologic ultra-staging. Data was prospectively collected. Patients were divided based on the initial half of surgical cases for each surgeon compared to the latter half and aggregated as Groups 1 (Initial) and Group 2 (Latter). Pearson's Chi-Square Test was used for comparisons.

Results: A total of 61 patients were enrolled by five surgeons. All cases except one had at least unilateral mapping. 7/61 patients (11.5%) had a positive SLN. There were no cases of false negative SLN among the 44 patients who underwent completion lymph node dissection. Bilateral SLN detection rates were significantly higher for cases using NIR as compared to colorimetric dye only (84.8% vs. 30.8% respectively, p=0.00011). Bilateral SLN mapping rates using NIR were consistent throughout the study period (87% vs. 83% for Groups 1 and 2 respectively, p=0.681). In contrast, there was a steep learning curve observed for SLN mapping using only colorimetric dye with bilateral detection rates of 17% vs. 43% for Group 1 and 2 respectively (p=0.308).

Conclusion: This study demonstrates that introduction of a sentinel lymph node protocol using NIR imaging results in rapid achievement of successful bilateral mapping as compared to colorimetric dye.

40. Surgical site complications after inguinal lymph node dissection in women with vulvar cancer

Jessica DiSilvestro MD, Katina Robison MD, Elizabeth Lokich MD

Objective: To determine the rate of incisional cellulitis in women with vulvar cancer who underwent an inguinal lymph node dissection (LND).

Methods: A quality assessment was performed to establish rates of surgical site infections and complications after inguinal LND for women with vulvar cancer. A retrospective cohort chart review was conducted to extract patient risk factors, intraoperative details, and postoperative complications. The primary outcome was rate of cellulitis within 30 days of surgery requiring antibiotic use. Women who received antibiotics for alternative reasons during this time frame were excluded.

Results: Between January 2019 and December 2021, 44 women with vulvar cancer underwent inguinal LND. Forty women had squamous cell carcinoma and four had melanoma. Of the 73 groins dissected, 44% had sentinel LND, 21% had sentinel LND attempted although transitioned to full LND, and 36% were planned full LND. Over half (66%) were bilateral LND, and in 80% of cases a concurrent vulvectomy was performed. Twenty percent of women were diagnosed with cellulitis within 30 days of surgery (9/44). Two of these patients were readmitted to the hospital for intravenous antibiotics. The infection rate per groin was 6.3% for sentinel LND and 20% for full LND (p=0.1). Over half of women (56%) who were diagnosed with cellulitis had a risk factor, including diabetes, immunosuppression, or tobacco use compared to only 34% in women without cellulitis (p=0.2). Women in the cohort also had high rates of lymphoceles (27%) and inguinal wound dehiscence (16%). A surgical drain was placed in 90% of groins after full LND and in none after sentinel LND.

Conclusion: Inguinal lymph node dissections are associated with high rates of postoperative cellulitis as well as other wound complications. Additional research is necessary to reduce the morbidity associated with inguinal dissections.

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