OPTIMIZING THE MANAGEMENT OF NEWLY DIAGNOSED OVARIAN CANCER INCLUDING MAINTENANCE





TRICIA I. FREDERICKS MD, MPH NOVEMBER 7, 2023





WELCOME



Q&A



Webinar

Future Webinars

WELCOME TODAY'S MODERATOR AND SPEAKER



Timothy Mullett, MD, MBA, FACS

Professor

Division of Cardiothoracic Surgery and
Medical Director, University of
Kentucky, Markey Cancer Center
Network Development



Tricia Fredericks, MD, MPH

Assistant Professor
Obstetrics and Gynecology
University of Kentucky Markey Cancer
Center

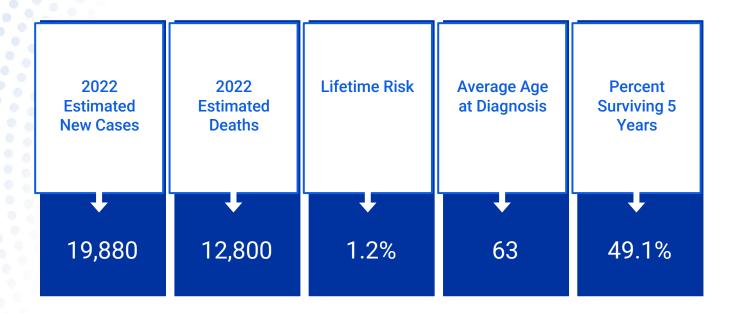


LEARNING OBJECTIVES

- Optimizing management of patients with newly diagnosed ovarian cancer
- Strategies to manage toxicities of novel ovarian cancer therapies
- Strategies to better manage patients with ovarian cancer at platinum resistant relapse
- Management of treatment options using a multidisciplinary care approach and the value of tumor boards
- Importance of clinical trial participation



OVARIAN CANCER KEY FACTS

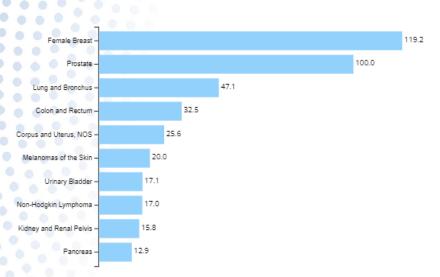


SEER Cancer Statistics Factsheets: Ovarian Cancer. National Cancer Institute.



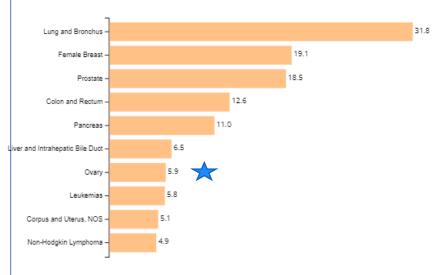
OVARIAN CANCER MORTALITY

Top 10 Cancers by Rates of New Cancer Cases
United States, 2020, All Races and Ethnicities,
Male and Female



Rate per 100,000 people

Top 10 Cancers by Rates of Cancer Deaths
United States, 2020, All Races and Ethnicities,
Male and Female

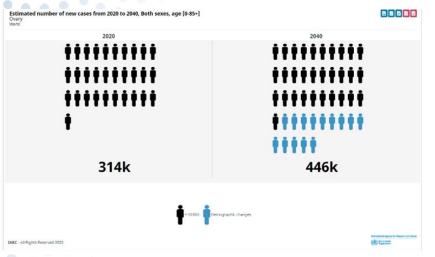


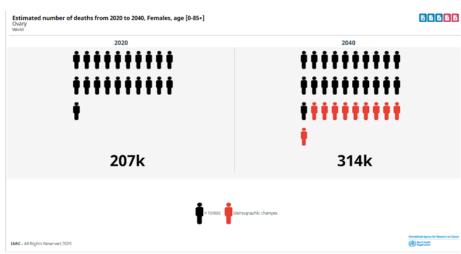
Source - U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2022 submission data (1999-2020): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; https://www.cdc.gov/cancer/dataviz, released in June 2023.



OVARIAN CANCER

ESTIMATED WORLDWIDE BURDEN





Incidence 2020 ->2040

Mortality 2020 -> 2040

https://gco.iarc.fr/tomorrow





POLLING QUESTION

What gynecologic malignancy has the highest mortality rate?

- a) Endometrial
- b) Ovarian
- c) Cervical
- d) Vulvar



NEWLY DIAGNOSED OVARIAN CANCER

NEWLY DIAGNOSED OVARIAN CANCER

- Initial assessment
- Can I feasibly perform a debulking surgery for the patient to no visible residual disease given current disease status?
- Can the patient tolerate surgery?
- Yes: Primary debulking surgery
- No: Neoadjuvant chemotherapy
- Is the patient able to tolerate/accept chemotherapy after surgery?
 - If no: recommend palliative care approach
- ***Germline and somatic genetic testing for every new diagnosis

Bristow, Robert E., Isha Puri, and Dennis S. Chi. *Gynecologic oncology* 112.1 (2009): 265-274. Hoskins, William J., et al. *American journal of obstetrics and gynecology*170.4 (1994): 974-980. Wright, Alexi A., et al. *Gynecologic oncology* 143.1 (2016): 3-15.



OVARIAN CANCER CYTOREDUCTIVE SURGERY

- Total abdominal hysterectomy
- Bilateral salpingo-oophorectomy
- Omentectomy
- Grossly visible disease
- Do not routinely remove lymph nodes only if grossly enlarged or disease appears confined to an ovary



LIMITATIONS TO PRIMARY SURGERY

- Stage IV Disease (Pleural effusions, metastatic lung nodules, liver, spleen parenchymal disease)
- Bulky upper abdominal disease
- Porta hepatis
- Enlarged high aortic lymph nodes
- Diffuse miliary disease
- Mesenteric disease
- Fixed pelvic mass
- Stomach
- Medical co-morbidities: cardiac, pulmonary, hepatic, recent DVT/PE



PRIMARY SURGERY

- Assess ability to successfully perform a debulking surgery with goal no visible residual disease
 - Imaging
 - Laparoscopy
- Surgery followed by:
- Carboplatin AUC 6 + Paclitaxel 175 mg/m2 iv q 21 days for 6 cycles
 - Various regimens: dose dense, IP regimens tested without survival benefit but increased toxicity
 - GOG 172, GOG 252, ICON 8, GOG 262

Katsumata, Noriyuki, et al. *The Lancet* 374.9698 (2009): 1331-1338. Clamp, Andrew R., et al. *The Lancet Oncology* 23.7 (2022): 919-930. Chan, John K., et al. *New England Journal of Medicine* 374.8 (2016): 738-748. Walker, Joan L., et al. *Journal of Clinical Oncology* 37.16 (2019): 1380. Armstrong, Deborah K., et al. *New England Journal of Medicine* 354.1 (2006): 34-43.





NEOADJUVANT CHEMOTHERAPY

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- Carboplatin AUC 6 + Paclitaxel 175 mg/m2 iv q 21 days for 3 cycles
- Consideration of interval debulking surgery
 - Has there been a good response to chemotherapy?
 - Can we technically debulk to no visible residual disease?
 - Are they healthy enough for surgery and willing to receive more chemotherapy after surgery?
- After surgery, additional Carboplatin AUC 6 + Paclitaxel 175 mg/m2 iv q 21 days for 3 cycles

Vergote, Ignace, et al. *New England Journal of Medicine* 363.10 (2010): 943-953. Kehoe, Sean, et al. *The Lancet* 386.9990 (2015): 249-257. Wright, Alexi A., et al. *Gynecologic oncology* 143.1 (2016): 3-15.





BEVACIZUMAB IN PRIMARY SETTING

GOG 218, ICON7

- Primary surgery followed by chemotherapy
 - Add bevacizumab starting cycle 2 after surgery if suboptimal debulking
 - Can continue with bevacizumab maintenance
- Neoadjuvant with good response and no visible residual after surgery
 - No bevacizumab
- Neoadjuvant chemotherapy with suboptimal interval debulking
 - Consider addition of bevacizumab with second cycle after surgery
- Neoadjuvant chemotherapy with response but not able to debulk
 - Consider addition of bevacizumab

Perren, Timothy J., et al. New England Journal of Medicine 365.26 (2011): 2484-2496. Burger, Robert A., et al. New England Journal of Medicine 365.26 (2011): 2473-2483.



MAINTENANCE?

- Bevacizumab can be continued as maintenance if it was used in the upfront setting
- PARP inhibitors approved in those with complete or partial response to platinum agents for maintenance
 - Germline or somatic BRCA 1/2, HRD pathway mutations
 - Evidence of HRD+ on Next Gen sequencing
 - All comers?
- Do not recommend chemotherapy for maintenance

Perren, Timothy J., et al. " New England Journal of Medicine 365.26 (2011): 2484-2496. Burger, Robert A., et al. New England Journal of Medicine 365.26 (2011): 2473-2483. DiSilvestro, Paul, et al. Journal of Clinical Oncology 41.3 (2023): 609. González-Martín, Antonio, et al. New England Journal of Medicine 381.25 (2019): 2391-2402. Markman, Maurie, et al. Gynecologic oncology 114.2 (2009): 195-198.





RECENT ASCO PARP INHIBITOR UPDATE

Recommendation Update

PARPi	First remission: maintenance	Second or greater remission: maintenance ^b
Olaparib	g/s <i>BRCA</i>	g/s <i>BRCA</i>
Olaparib combined with bevacizumab	g/s <i>BRCA</i> ^a	No
Niraparib	g/s <i>BRCA</i> ; HRD; wt	g/s <i>BRCA</i> ; HRD; wt
Rucaparib	g/s <i>BRCA</i> ; HRD; wt	g/s <i>BRCA</i> ; HRD; wt

Abbreviations. g/s*BRCA*, germline or somatic *BRCA*1/2 mutation; HRD, homologous recombination deficiency; wt, *BRCA*1/2 wild-type.

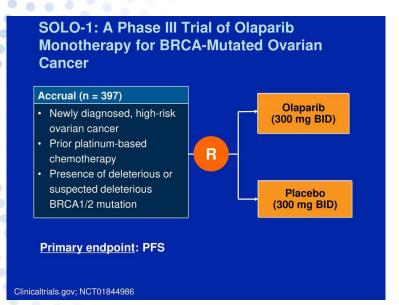
Tew, William P., Christina Lacchetti, and Elise C. Kohn. *Journal of Clinical Oncology* 40.33 (2022): 3878-3881.

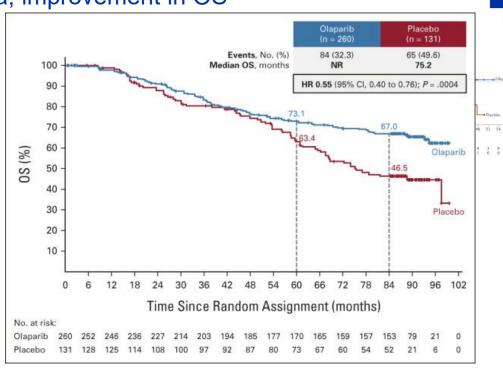




SOL01

 "results indicate a clinically meaningful, albeit not statistically significant according to prespecified criteria, improvement in OS"





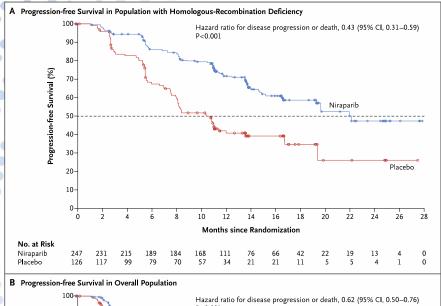
OS HR 0.55 (95% CI 0.40 to 0.76) p = .0004 with p<.0001 to declare statistical significance.

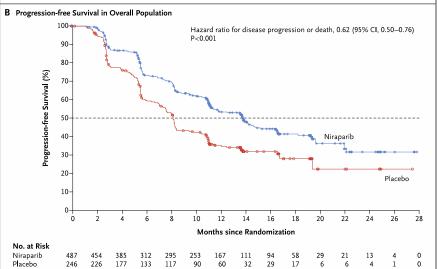
DiSilvestro, Paul, et al. Journal of Clinical Oncology 41.3 (2023): 609.





PRIMA







OVERALL

PFS 13.8 MO VS 8.2 MO

HR 0.62 (95% CI 0.50-0.76) P<0.001

<u>HRD</u>

PFS 21.9MO VS 10.4MO

HR 0.43 (95% CI 0.31-0.59) P<0.001

HR PROFICIENT

PFS 8.1 VS 5.4MO

HR 0.68 (95% CI 0.49-0.94)

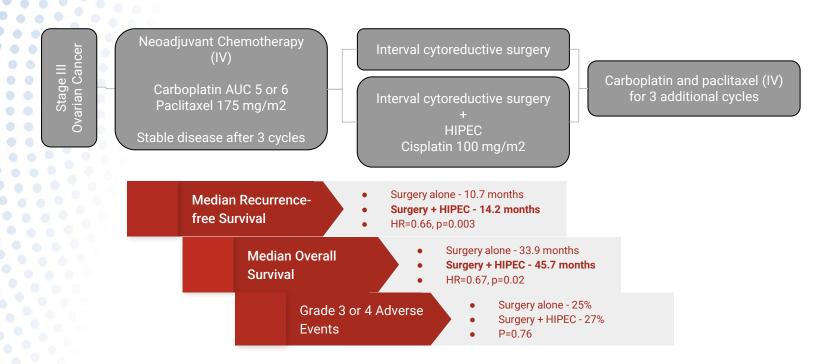
González-Martín, Antonio, et al. *New England Journal of Medicine* 381.25 (2019): 2391-2402.



University of Kentucky.

HIPEC IN OVARIAN CANCER

Benefit of HIPEC still under investigation



Van Driel, Willemien J., et al. *New England Journal of Medicine* 378.3 (2018): 230-240.





POLLING QUESTION

What findings would limit the ability to have a primary debulking surgery?

- a) Enlarged ovary
- b) Ascites
- c) 1.2 cm external iliac lymph node
- d) Multiple liver parenchymal metastases



TOXICITIES OF NOVEL OVARIAN CANCER THERAPIES

TOXICITIES OF NOVEL OVARIAN CANCER THERAPIES

PARP INHIBITORS

 PARP inhibitors approved in those with complete or partial response to platinum agents for maintenance

Nausea:

- take with food
- anti-emetics

Anemia:

- Continue vs hold with hemoglobin 8-10
- hold for hemoglobin <8, start back at lower dose if recovered within 4 weeks

Thrombocytopenia

- 75-100,000: hold until recovers >100,000
- 25-75,000: hold until >100,000 dose reduce
- <25,000: hold anticoagulation, hold until >100,000, dose reduce

Neutropenia

- 500-1000, continue PARPi, monitor for signs of infection
- <500: if lasts 5-7 days, hold until ANC <1500, resume with dose

Fatigue

 Evaluate anemia, integrative medicine, hold then dose reduce if interfering with ADLs, consider stimulants



TOXICITIES OF NOVEL OVARIAN CANCER THERAPIES

MIRVETUXIMAB

- Transfusion reaction
 - Pretreat with dexamethasone, diphenhydramine, acetaminophen, 5-HT3 serotonin receptor antagonist
- Dry/blurry eyes, changes in vision, corneal ulceration
 - Eye exam before starting and at least every other cycle
 - Dexamethasone and lubricating eye drops starting the day before the infusion and continuing for 8 days after the infusion
- Nausea
 - Anti-emetics
- Diarrhea
 - Loperamide
- Pneumonitis
 - Grade 2 hold until grade 1 then dose reduce
- Peripheral neuropathy
 - Grade 2 hold until grade 1 then dose reduce



POLLING QUESTION

What is not a side effect of mirvetuximab?

- a) Thrombocytopenia
- b) Dry/blurry eyes
- c) Nausea
- d) Transfusion reaction



PLATINUM RESISTANT RECURRENCE

PLATINUM RESISTANT RECURRENCE

- Platinum resistant recurrence: <6 months since last platinum agent
- Standard of Care cytotoxic chemotherapy options
 - Dose-dense paclitaxel RR 21% SD 46%
 - Liposomal doxorubicin RR 20%
- Add bevacizumab if they did not get in upfront setting as long as no history of bowel obstruction or malignant bowel involvement (Aurelia trial with improved RR)
- Other chemotherapy options
 - Single agent bevacizumab RR 21%
 - Gemcitabine RR 19% SD 55%
 - Topotecan RR 17%
 - Oral Etoposide RR 27%
 - Oral Cytoxan + bevacizumab RR 24%
- Next Generation Sequencing if has not previously been done
 - Consider referral to the molecular tumor board
 - Mirvetuximab (targeted agent to folate receptor-alpha) RR 32%

Pujade-Lauraine, Eric, et al. *Obstetrical & Gynecological Survey* 69.7 (2014): 402-404. Tewari, Krishnansu S., et al. *Journal of Clinical Oncology* 37.26 (2019): 2317. Lund, Birthe, et al. *JNCI: Journal of the National Cancer Institute* 86.20 (1994): 1530-1533. Sehouli, Jalid, et al. *Journal of Clinical Oncology* 29.2 (2011): 242-248. Rose, Peter G., et al. *Journal of Clinical Oncology* 16.2 (1998): 405-410. Matulonis, Ursula A., et al. *Obstetrical & Gynecological Survey* 78.6 (2023): 343-344. Garcia, Agustin A., et al. *Journal of Clinical Oncology* 26.1 (2008): 76-82.



RECENT ASCO UPDATE:

PARP inhibitors are no longer indicated as <u>treatment</u> for ovarian cancer due to no overall survival benefit

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Tew, William P., Christina Lacchetti, and Elise C. Kohn. Journal of Clinical Oncology 40.33 (2022): 3878-3881.



POLLING QUESTION

What PARP inhibitor does ASCO recommend for treatment of Ovarian Cancer?

- a) Niraparib
- b) Olaparib
- c) Rucaparib
- d) None of above



Markey Cancer Center Molecular Tumor Board

Jill Kolesar, PharmD, MS
Professor, College of Pharmacy
Co-Director, Molecular Tumor Board

Rachel W. Miller, MD
Professor Gynecologic Oncology
Co-Director, Molecular Tumor Board



MCC MOLECULAR TUMOR BOARD

- MTB is a free statewide service available to physicians at UK HealthCare & regional affiliates.
- Forum for expert clinicians, pathologists & scientists to discuss and analyze tumor genotypes & molecular abnormalities in order to recommend patient specific targeted therapies.

Meetings occur 1st and 3rd Tuesdays at 12:00 (zoom).







MOLECULAR TUMOR BOARD TIMELINE

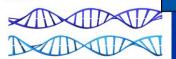
Genomic Report:

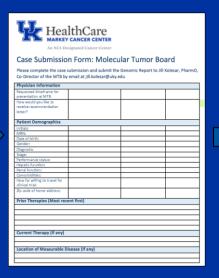
Gene 1 - mutation detected

Gene 2

Gene 3 – mutation detected

Gene 4









STEP 1

Physician orders genomic report on patient through any vendor.

STEP 2

Physician requests MCC MTB consult

STEP 3

MCC MTB
Manager informs
requesting
physician of case
approval &
meeting
information

STEP 4

MCC MTB reviews patient's case at the meeting & sends physician treatment recommendation



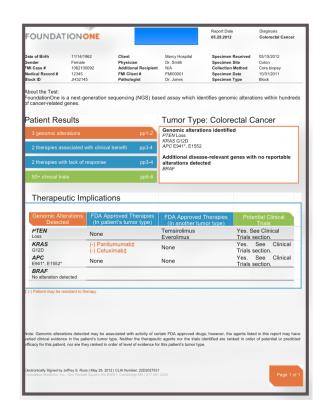


HOW TO SUBMIT A CASE TO THE MOLECULAR TUMOR BOARD



WHO CAN BE REFERRED?

- PATIENTS FOR WHOM YOU PLAN TO OR HAVE ALREADY ORDERED GENOMIC TESTING
 - Any vendor is acceptable
- MCC MTB MAY BE UTILIZED IN FIRST-LINE OR REFRACTORY SETTING
- ONLY REQUIREMENT FOR PRESENTATION AT MCC MTB IS A COMPLETE GENOMIC REPORT







MCC MTB CASE PRESENTATION

- PATIENTS PRESENTATIONS TAKE APPROXIMATELY 15
 MINUTES, INCLUDING DISCUSSION
- PRESENTATIONS CONSIST OF :
 - Clinical information (Referring physician or other delegate)
 - Pathology slide review (UK pathologist)
 - Genomic report with review of clinically relevant mutations (Dr. Kolesar)
 - Summary of available therapies and clinical trials (Pharmacist)
 - Discussion and vote (MCC MTB)







Jill M. Kolesar, PharmD, MS Clinical Pharmacologist Co-Director, Molecular Tumor Board

Rachel Miller, MD

Gynecological Oncologist Co-Director, Molecular Tumor Board

Susanne Arnold, MD Medical Oncologist Associate Director for Translational Research

> Justine Pickarski, MS Genetics Counselor



Molecular Tumor Board Recommendation

Dear Dr. Fredericks:

The Markey Cancer Center Molecular Tumor Board has administratively reviewed your patient, serous carcinoma of the ovary). After reviewing the genomic report and clinical characteristics of the case, the MTB recommends consideration of the following:

- If progression, consider on-label mirvetuximab soravtansine-gynx targeting the FOLR1 positivity of 80%. This is a category 1
 evidence level recommendation.
- If patient is appropriate for maintenance therapy following front line therapy, consider screening for the following clinical trial at Markey Cancer Center:
 - a. NCT04805333 (GYN-08): Phase 1 Dose Escalation of ArtemiCoffee
- 3. Consider germline testing due to tumor type. This is a category 1 evidence level recommendation.

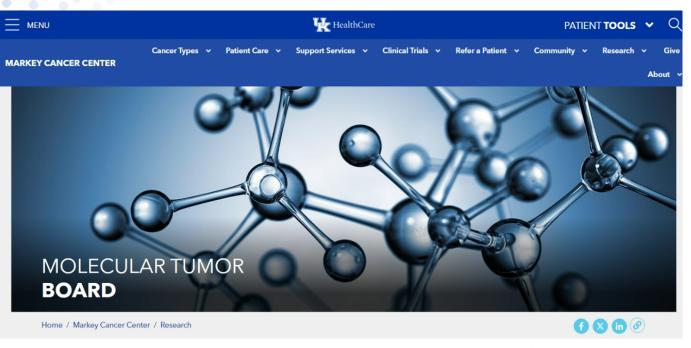
For questions or concerns regarding the clinical trial at UK, please contact Jeri Reynolds at (859) 218-0131.

For questions concerning germline testing, please contact Justine.cooper@uky.edu

Thank-you for submitting this case to the Markey Cancer Center MTB.

Signature:	Date:
Signature:	Date:
Signature:	Date:





The Markey Cancer Center Molecular Tumor Board (MTB) is a statewide service available to physicians at UK HealthCare and regional affiliates.

The MTB provides a forum for expert clinicians, pathologists and scientists to discuss and analyze tumor genotypes and molecular abnormalities in order to recommend patient-specific targeted therapies.

The MTB is intended to supplement oncology tumor boards and includes a broad range of expert panel members.

Clinicians can order a genomic report and submit a case study to be presented for review by the MTB during their twice-monthly meetings. For an overview of the MTB, download the referral flyer below.

Download our referral flyer (PDF, 295 KB)

Leadership Contact Information

- · Jill Kolesar, PharmD, MS, Co-Director
- · Rachel Miller, MD, Co-Director

Click here to contact the tumor board by email, or email Dr. Kolesar directly.





Administrative Office

Abigail Anderson, PhD, aman239@uky.edu MTB Project Manager

Rebecca Carpenter, rebecca.carpenter@uky.edu Administrative Support Associate



Meetings

The Molecular Tumor Board (MTB) meets:

- 12 p.m.
- · Every first and third Tuesday

MTB meetings are currently held via Zoom. Please email either Abigail Anderson, PhD or Rebecca Carpenter for Zoom details to attend.

Some MTB meetings will include a 15-minute informational update on Precision Medicine.

To schedule a case presentation, review the details in the Case Submission section. All cases must be submitted to MTB seven days prior to the meeting date.

2023 MTB Meeting Schedule

Month	Day / Tues	Location
June	20	Zoom
July	4	Canceled
July	18	Zoom
August	1	Zoom
August	15	Zoom
September	5	Zoom
September	19	Zoom
October	3	Zoom
October	17	Zoom
November	7	Zoom
November	21	Zoom
December	5	Zoom
December	19	Zoom

Continuing Medical Education (CME)

If clinicians or pharmacists want to obtain CE Credit for this meeting, they must attend the meeting in person or via teleconference, then enter the provided access code on the CE Central website. Any questions or concerns regarding CE Credit can be directed to the MTB Manager at mtb@uky.edu.

Policy on Disclosure

It is the policy of the Markey Cancer Center that the faculty, authors, planners and other persons who may influence the content of this CME activity disclose all relevant financial relationships with commercial interests in order to allow CME staff to identify and resolve any potential conflicts of interest. Faculty must also disclose any planned discussions of unlabeled/unapproved uses of drugs or devices during their presentation.

Case Submission

Cases must be submitted at least seven days prior to the meeting date.

Genomics reports from UK HealthCare or external sources (Foundation, MATCH, etc.) can be submitted.

A patient's genomic report is required for case submission. Please see how to order a genomic report through UK HealthCare under Order a Genomic Report below.

If you already have a genomic report, fill out the case submission form online, or download the form below.

Download form

The patient's genomic report can be sent to MTB by email.

When the case submission and genomic report are received, the MTB manager will schedule the case for presentation and invite the treating clinician to the meeting.

Treatment recommendations will be discussed at the MTB meeting. Recommendation letters will be faxed and/or mailed or uploaded into the electronic health record per the preference of the submitting physician. Specify method of results reporting on the case submission form.



POLLING QUESTION

What is the only requirement to submit a case to the Markey Cancer Center Molecular Tumor Board?

- a) First-line treatment question
- b) Genomics report
- c) PS 0-1
- d) Refractory treatment setting



CLINICAL TRIAL PARTICIPATION

IMPORTANCE OF CLINICAL TRIAL PARTICIPATION

From Society of Gynecologic Oncology:

"When new treatments for cancer are developed, they are tested through clinical trials. Major advances in the treatment of gynecologic cancer have all been based on the results of these trials.

Trials are important because it helps us to know whether the practices should be added to the standard treatment options offered to patients.

Participation in gynecologic cancer clinical trials allows patients access to cutting-edge treatment while helping to establish the standard of care for the next generation of women with these diseases."

Clinical Trials for Gynecologic Cancer | Society of Gynecologic Oncology (sgo.org)



OVARIAN CANCER TRIALS OPEN AT MCC

20-GYN-08 Advanced Ovarian Cancer – Dose Escalation of ArtemiCoffee Maintenance trial



GOG 3068/HOTT

GOG 3078/GLORIOSA



20-GYN-08

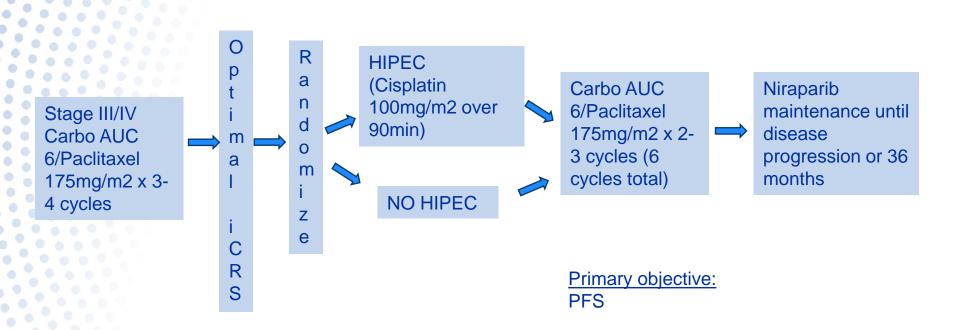
PHASE 1 DOSE ESCALATION

- Stage II-IV with complete response to initial therapy
- Phase 1 dose escalation of Artemisia annua decaffeinated coffee
- After the recommended Phase 2 dose is identified, the study will evaluate an expansion cohort to evaluate
 - time to tumor progression or recurrence
 - ability to influence downstream biomarkers NRF2/KEAP1
 - Plasma concentrations of artemisinin and dihyrdroartemisinin



GOG-3068/HOTT TRIAL

SCHEMA







Effect of HRD, stage, residual disease

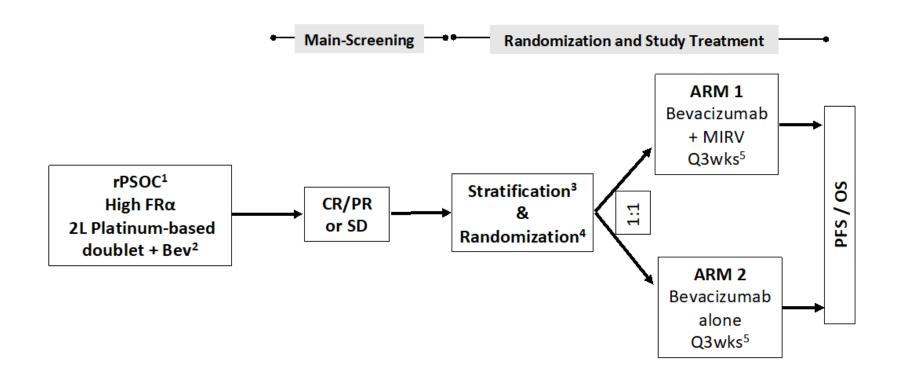
Secondary objectives:

Adverse events

OS

GOG-3078/GLORIOSA TRIAL

Mirvetuximab Soravtansine With Bevacizumab Versus Bevacizumab as Maintenance in Platinum-sensitive Ovarian, Fallopian Tube, or Peritoneal Cancer (GLORIOSA)





PATIENT SCENARIO

PATIENT MCC

- 61 YO F PRESENTING WITH ABDOMINAL DISTENTION, DECREASED APPETITE
- CA125 1499
- EXAM FINDINGS WITH A FIXED PELVIC MASS
- CT GUIDED BIOPSY HIGH GRADE SEROUS CARCINOMA
- NEXT GEN SEQUENCING BRCA1 MUTATION, FOLR1+







PATIENT MCC

- With a fixed pelvic mass and carcinomatosis
 - Start with neoadjuvant carboplatin + paclitaxel x 3 cycles
- Excellent response with normalization of CA125
- Interval debulking surgery with no visible residual disease (R0)
 - carboplatin + paclitaxel x 3 cycles
- Parp inhibitor maintenance with BRCA1+



PATIENT MCC

- 3 months later, increase in CA125, imaging obtained with recurrence
 - consider referral to molecular tumor board
 - chemotherapy vs targeted therapy (mirvetuximab for FOLR1+)











Thank you for Attending!

Please keep an eye out for future educational webinars!

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