Unlocking New Treatment Options for Patients with Ovarian Cancer

FOUNDATION MEDICINE®

NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Recommend Molecular Testing in Ovarian Cancer[1]

1 For patients with pathologically confirmed ovarian cancer,

a. Recommend genetic risk evaluation and germline and somatic testing (if not previously done). **Germline and/or somatic *BRCA1/2*** mutation status informs maintenance therapy after first-line platinum-based chemotherapy.

b. In the absence of a *BRCA1/2* mutation, **homologous recombination deficiency (HRD) status** may provide information on the magnitude of benefit of PARP inhibitor as maintenance therapy after first-line platinum-based chemotherapy (category 2B).

2 For patients with persistent or recurrent ovarian cancer,

a. Recommend tumor molecular testing, using the most recent available tumor tissue, including at least ***BRCA1/2* and microsatellite instability (MSI) or DNA mismatch repair** if not previously done.

b. **Evaluation of HRD** can be considered.

c. **Additional somatic tumor testing can be considered** at the physician's discretion to identify genetic alterations for which FDA-approved tumor-specific or tumor-agnostic targeted therapy options exist.

Our portfolio of tests analyzes guideline recommended genes for relevant alterations in patients with ovarian cancer including *BRCA1/2* somatic and germline*, other homologous recombination repair (HRR) pathway gene alterations resulting in HRD, and MSI.

*Foundation Medicine detects both somatic and germline alterations but does not differentiate between the two on reports.

Advancing Therapy Options for Ovarian Cancer Patients

FDA-Approved therapies, including the **bolded therapies** for which FoundationOne®CDx is the companion diagnostic

BIOMARKER	FDA-APPROVED THERAPY
BRCA1/2	**Lynparza®** (olaparib) **Rubraca®** (rucaparib) Zejula® (niraparib)*
gLOH	Rubraca® (rucaparib)
MSI-H	Keytruda® (pembrolizumab)
NTRK fusions	Rozlytrek® (entrectinib) Vitrakvi® (larotrectinib)
TMB ≥ 10 mutations per megabase	**Keytruda® (pembrolizumab)**

**BRCA1/2* mutation not required for use as a monotherapy in the first-line maintenance setting

Value of Comprehensive Genomic Profiling with Foundation Medicine

Our portfolio of tests detects additional biomarkers in genes known to be relevant in ovarian cancer, including genomic Loss of Heterozygosity (gLOH) which is associated with improved progression free survival (PFS) from Rubraca® (rucaparib) maintenance therapy in accordance with the Rubraca® product label as found in the ARIEL2 study using Foundation Medicine's NGS assays.[2]

When using Foundation Medicine tests, 19.5% of ovarian cancer patients were identified as having HRR alterations.[3]

Our portfolio of tests analyzes known and emerging HRR pathway genes, including *ATM, ATRX*, BAP1*, BARD1, BRCA1/2, BRIP1, CHEK1, CHEK2, FANCA, FANCL, MRE11A, NBN, PALB2, RAD51, RAD51B, RAD51C, RAD51D, RAD52, and RAD54L*[4]

Growing Therapy Options in Ovarian Cancer

Genomic alterations and biomarkers relevant for clinical trials or with novel therapies

MOLECULAR ALTERATION	→ DRUG CLASS
FGFR	*FGFR* Inhibitors
ARID1A	*EZH2* Inhibitors
CCNE1	*CHK1* Inhibitors
FOXL2[5]	Endocrine-based
TSC2, PIK3CA, AKT2, etc.[6]	*PI3K/AKT1/MTOR* pathway inhibitors
BRCA1/2	*PARP* inhibitors

FDA-approved portfolio of tests to help identify more treatment options:

FOUNDATIONONE®CDx

TISSUE BIOPSY

FoundationOne CDx is FDA-approved and covered by Medicare for qualifying patients.[7]

- Analyzes 324 genes
- Reports gLOH*, TMB and MSI
  *in ovarian tumor tissue only

FOUNDATIONONE®LIQUID CDx

LIQUID BIOPSY

FoundationOne Liquid CDx is FDA-approved and covered by Medicare for qualifying patients.[7]

- Analyzes 324 genes†
- Reports bTMB, MSI-H and Tumor Fraction†

* FoundationOne Liquid CDx only reports MSI when determined to be high.
† FoundationOne Liquid CDx is FDA-approved to report substitutions and indels in 311 genes, including rearrangements and copy number losses only in *BRCA1/2*. Comprehensive results across all 324 genes, including bTMB, MSI-H status, and tumor fraction are reported in the professional services section of the report.

TO LEARN MORE:

Visit *www.foundationmedicine.com*

TO SIGN UP OR ORDER A TEST:

Visit *www.foundationmedicine.com/signup*

FoundationOne®CDx and FoundationOne®Liquid CDx are qualitative next-generation sequencing based *in vitro* diagnostic tests for advanced cancer patients with solid tumors and are for prescription use only. FoundationOne CDx utilizes FFPE tissue and analyzes 324 genes as well as genomic signatures. FoundationOne Liquid CDx analyzes 324 genes utilizing circulating cell-free DNA and is FDA-approved to report short variants in 311 genes. The tests are companion diagnostics to identify patients who may benefit from treatment with specific therapies in accordance with the therapeutic product labeling. Additional genomic findings may be reported and are not prescriptive or conclusive for labeled use of any specific therapeutic product. Use of the tests does not guarantee a patient will be matched to a treatment. A negative result does not rule out the presence of an alteration. Some patients may require a biopsy for testing with FoundationOne CDx when archival tissue is not available which may pose a risk. Patients who are tested with FoundationOne Liquid CDx and are negative for companion diagnostic mutations should be reflexed to tumor tissue testing and mutation status confirmed using an FDA-approved tumor tissue test, if feasible. For the complete label, including companion diagnostic indications and important risk information, please visit www.F1CDxLabel.com and www.F1LCDxLabel.com.

References:

1. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Ovarian Cancer V.1.2020. © National Comprehensive Cancer Network, Inc. 2020. All rights reserved. Accessed May 27, 2020. To view the most recent and complete version of the guideline, go online to NCCN.org. NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way.
2. Swisher, E. M. et al. (2017) Rucaparib in relapsed, platinum-sensitive high-grade ovarian carcinoma (ARIEL2 Part 1): an international, multicentre, open-lable, phase 2 trial. Lancet Oncology, 18(1), pp. 75-87.
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6. Cheaib, B., Auguste, A. and Leary, A. (2015), The PI3K/Akt/mTOR pathway in ovarian cancer: therapeutic opportunities and challenges. Cancer Communications, 34: 4-16.
7. The Centers for Medicare & Medicaid Services (CMS) Decision Memo for Next Generation Sequencing (NGS) for Medicare Beneficiaries with Advanced Cancer (CAG-00450R) see Appendix B.

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