Myriad Genetics
myChoice HRD® Update
06/30/2016
Forward Looking Statements

Some of the information presented here today may contain projections or other forward-looking statements regarding future events or the future financial performance of the Company. These statements are based on management’s current expectations and the actual events or results may differ materially and adversely from these expectations. We refer you to the documents the Company files from time to time with the Securities and Exchange Commission, specifically, the Company’s annual reports on Form 10-K, its quarterly reports on Form 10-Q, and its current reports on Form 8-K. These documents identify important risk factors that could cause the actual results to differ materially from those contained in the Company’s projections or forward-looking statements.
A Pioneering Discovery: myChoice HRD
PARP Mechanism of Action

Single-strand break

PARP inhibitors

Double-strand breaks

Normal Cell
- Repair by homologous recombination
- DNA repaired
- Cell survival

Deficient Cell
- No homologous recombination
- No repair
- Cell death
- DNA repaired
Homologous Recombination (HR) Pathway Status Predicts Drug Response

- When the HR pathway is working properly, DNA can be repaired effectively and is error free, maintaining genomic stability.
- When the HR pathway is disrupted by gene mutations, promoter methylation or unknown causes, the HR pathway stops working leading to genomic instability or homologous recombination deficiency (HRD).
- Patients who have a defective pathway are much more likely to respond to drugs that impact DNA stability such as platinum drugs and PARPs.
Most Causes of Homologous Recombination Deficiency (HRD) Are Unknown

- When the HR pathway is disrupted by gene mutations, promoter methylation or unidentified causes, the HR pathway stops working leading to Homologous Recombination Deficiency or HRD.

- Tumors with HRD are unable to repair themselves effectively after sustaining damage, leading to genomic instability.
Pioneering Discovery: Measure the **Effects** vs. the **Causes**

The **EFFECT**.....

The **Cause**?
- Lane closure?
- Traffic light failure?
- Overturned truck?
- Fender bender?
- Presidential motorcade?

Who cares.....
Measuring the DNA “Scar” – With Proprietary Informatics

Genome profiles are pictures of instability in tumor DNA

myChoice HRD Negative (myChoice HRD Score = 3)

myChoice HRD Positive (myChoice HRD Score = 81)

Cutoff = 42

genomic instability caused by HRD
myChoice HRD Identifies the Most Patients with Ovarian Cancer Potentially Eligible for a Drug

- 15% of patients are positive for BRACAnalysis CDx\(^1\)
- 22% of patients are positive for Tumor BRACAnalysis CDx\(^2\)
- \(\approx 25\%\) of patients are positive for a broad tumor HR panel\(^3\)
- \(\approx 50\%\) of patients are positive for myChoice HRD\(^4\)

Detects twice as many patients as any other test

Comprehensive Tumor Profiling Identifies Few Additional HRD Patients

AstraZeneca Study 19: 135 patients with tumor mutations as profiled with 315 gene Foundation Medicine Panel

- Only 4 genes mutated more than once
- Only 12 genes had any mutations

BRCA1 or BRCA 2, 84%
Rearrangements (8 genes), 7%
RAD51B, 1%
RAD54L, 2%
CDK12, 2%
BRIP1, 4%
<table>
<thead>
<tr>
<th>Sample</th>
<th>Blood</th>
<th>Tumor</th>
<th>Tumor</th>
<th>Tumor</th>
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<tbody>
<tr>
<td>Biomarkers</td>
<td>BRCA1&amp;2</td>
<td>Tumor BRCA1&amp;2</td>
<td>80+ clinically actionable oncology genes identified by pharma partners</td>
<td>Genome-wide assessment of DNA scar associated with DNA repair defects</td>
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<tr>
<td>Intellectual Property</td>
<td>Database, process, bioinformatics</td>
<td>Database, process, bioinformatics</td>
<td>Database, process, bioinformatics</td>
<td>MYGN has IP on three proprietary technologies (LOH, TAI, LST)</td>
</tr>
<tr>
<td>Currently Marketed</td>
<td>FDA approved</td>
<td>CE Marked</td>
<td>In research use with major pharma partners</td>
<td>Early access launch for platinum</td>
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myChoice HRD Score Results From the Combined Analysis of Three Different Biomarkers

Loss of Heterozygosity (LOH) + Telomeric Allelic Imbalance (TAI) + Large-Scale State Transitions (LST) = myChoice HRD Score
Three Biomarkers Result in a More Discriminating Measurement of HRD

- **Loss of heterozygosity (LOH)**
  - Presence of a single allele

- **Telomeric allelic imbalance (TAI)**
  - A discrepancy in the 1:1 allele ratio at the end of the chromosome (telomere)

- **Large-scale state transitions (LST)**
  - Transition points between regions of abnormal and normal DNA or between two different regions of abnormality
Single Measures of HRD are Insufficient

In a cohort of 859 ovarian tumors, only a combination of all three biomarkers (HRD score) yielded a clear cutoff.

NOVA Study and Data
Review of the NOVA Study

Phase 3 NOVA Trial

High-Grade Serous Ovarian Cancer, Platinum Sensitive, Relapsed

Response to Platinum Treatment
N=490

2:1 Randomization

Niraparib 300mg
n=120

Niraparib 300mg
n=207

2:1 Randomization

Non-gBRCA\textsuperscript{mut} / HRD

N=310

Placebo
n=60

Placebo
n=103

Endpoint Assessment

Endpoint Assessment

myChoice HRD:
- First assess PFS in HRD+ subset
  - n\approx 165
  - >90% power to detect a HR=0.50
- If HRD+ subset has p<0.05, assess PFS for the entire cohort
  - N=310
  - >90% power to detect a HR=0.50

Primary Endpoint:
- PFS; >90% power to detect 4.8 month improvement (HR 0.50 in both cohorts)
- Assumption: 4.8 month PFS for control arms
Niraparib Highly Efficacious in Both myChoice HRD+ Patients and Germline BRCA+ Patients

Progression Free Survival

- myChoice HRD+ (with niraparib): 12.9 months
- myChoice HRD+ (placebo): 3.8 months

- Germline BRCA+ (with niraparib): 21.0 months
- Germline BRCA+ (placebo): 5.5 months

p<0.0001
Summary of the NOVA Data

1) Niraparib is highly effective in patients with germline BRCA mutations and those with myChoice HRD positive test results

2) myChoice HRD identifies ≈2x as many patients who would benefit from Niraparib compared to the FDA approved BRACAnalysis CDx test.

3) The myChoice HRD+ patients demonstrated an incremental 9.1 months of progression free survival benefit, which is higher than seen in previous PARP studies
Business Impact
Extensive Collaborations With >22 Clinical Studies

First indication with myChoice HRD as the companion diagnostic

Global Market > 1.4M patients or $6.0b*

*Includes U.S., Canada and EU6
myChoice HRD Addressable Market in Ovarian Cancer

- U.S. 22,000 patients
- EU5 & Canada 38,000 patients
- >$200M Global Market

Differentiated diagnostic that is strategically important to pharma
Protected by strong intellectual property with both patents and trade secrets
Unlike BRACAnalysis CDx, this is an additive opportunity
myChoice HRD is Additive To Hereditary Cancer Testing

Tumor BRCA+

≈20%

Single site confirmation test

Tumor BRCA-

≈30%

≈50%
Revenue Curve for Companion Diagnostics is Much Steeper Than for Traditional Diagnostics
Other Strategic Considerations

• First prospective data and major validation of myChoice HRD – reduces risk for pharma partners and likely drives additional collaborations

• Growing core competency in FDA approved, high-value companion diagnostics

• Intellectual property around myChoice HRD is significant and provides global differentiation