LYNPARZA® (olaparib) Plus Abiraterone Reduced Risk of Disease Progression or Death by 34% Versus Abiraterone in First-Line Metastatic Castration-Resistant Prostate Cancer, Regardless of Biomarker Status

2/14/2022

PROpel Is the First Phase 3 Trial to Show Clinical Benefit in Radiographic Progression-Free Survival With a PARP Inhibitor in This Setting

KENILWORTH, N.J.--(BUSINESS WIRE)-- AstraZeneca and Merck (NYSE: MRK), known as MSD outside the United States and Canada, today announced that positive results from the Phase 3 PROpel trial showed LYNPARZA in combination with abiraterone plus prednisone demonstrated a statistically significant and clinically meaningful improvement in radiographic progression-free survival (rPFS) versus abiraterone plus prednisone, a standard of care, as a first-line treatment for patients with metastatic castration-resistant prostate cancer (mCRPC) with or without homologous recombination repair (HRR) gene mutations.

Results from the trial will be presented at the 2022 American Society of Clinical Oncology (ASCO) Genitourinary (GU) Cancers Symposium on Feb. 17, 2022 (Abstract 11).

Globally, prostate cancer is the second most common cancer in patients assigned as male at birth, with an estimated 1.4 million patients diagnosed worldwide in 2020. Approximately 10-20% of men with advanced prostate cancer are estimated to develop CRPC within five years, and at least 84% of these men may develop metastases at the time of CRPC diagnosis. Patients with advanced prostate cancer have a particularly poor prognosis, and the five-
year survival rate remains low.

PROpel is a randomized, double-blind, multi-center Phase 3 trial. In Sept. 2021, at a planned interim analysis, the Independent Data Monitoring Committee concluded that the PROpel trial met the primary endpoint of rPFS. LYNPARZA in combination with abiraterone plus prednisone (n=399) reduced the risk of disease progression or death by 34% (HR=0.66 [95% CI, 0.54-0.81]; p<0.0001) versus abiraterone plus prednisone and placebo (n=397) in patients with mCRPC regardless of HRR gene mutation status. Median rPFS was 24.8 months for LYNPARZA combined with abiraterone versus 16.6 months for abiraterone, an improvement of more than eight months.

The most common adverse events (AEs) (≥20%) for LYNPARZA plus abiraterone were anemia (46%), fatigue (37%) and nausea (28%). Grade ≥3 AEs were anemia (15%), hypertension (4%), urinary tract infection (2%), fatigue (2%), decreased appetite (1%), vomiting (1%), back pain (1%), diarrhea (1%) and nausea (0.3%). Approximately 14% of patients who received LYNPARZA in combination with abiraterone discontinued treatment due to an AE. Health-related quality of life, an exploratory endpoint, was measured longitudinally using Functional Assessment of Cancer Therapy-Prostate (FACT-P), a patient reported outcome instrument. No detriment to quality of life was found between the two study arms.

At this interim analysis, PROpel also showed a trend towards improved overall survival (OS) for LYNPARZA combined with abiraterone plus prednisone versus abiraterone plus prednisone and placebo; however, the difference did not reach statistical significance at the time of this data cut-off (analysis at 29% data maturity) (HR=0.86 [95% CI, 0.66-1.12]; p<0.29). The trial will continue to assess OS as a key secondary endpoint.

Fred Saad, professor and chairman of Urology and director of Genitourinary Oncology at the University of Montreal Hospital Center and principal investigator in the trial, said, “It is clear to me that the prognosis for metastatic castration-resistant prostate cancer is extremely poor, and many patients are able to receive only one line of effective therapy. The results of the PROpel trial, which showed that olaparib in combination with abiraterone significantly delayed disease progression versus abiraterone by more than eight months, demonstrate the potential for this combination to become a new standard of care option in metastatic castration-resistant prostate cancer, if approved.”

Susan Galbraith, executive vice president, oncology R&D, AstraZeneca, said, “This LYNPARZA combination has the potential to afford first-line patients more time without disease progression while also maintaining their quality of life. The PROpel results are impressive because active comparator trials set a high bar and, in this trial, LYNPARZA plus abiraterone showed a significant clinical improvement when compared to an active standard of care in patients with metastatic castration-resistant prostate cancer, regardless of whether they have an HRR gene mutation.”
Roy Baynes, senior vice president and head of global clinical development, chief medical officer, Merck Research Laboratories, said, “Results from the PROpel trial showed that LYNPARZA in combination with abiraterone plus prednisone reduced the risk of disease progression or death by a third compared to abiraterone plus prednisone in the first-line setting for patients with metastatic castration-resistant prostate cancer, regardless of their biomarker status. We look forward to discussing these important results with global health authorities as quickly as possible. We thank the patients, caregivers and health care providers for participating in this study.”

**Summary of PROpel Results**

<table>
<thead>
<tr>
<th></th>
<th>LYNPARZA + abiraterone (n=399)</th>
<th>Placebo + abiraterone (n=397)</th>
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<tbody>
<tr>
<td><strong>rPFS by Investigator</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of patients with events (%)</td>
<td>168 (42)</td>
<td>226 (57)</td>
</tr>
<tr>
<td>Median PFS (months)</td>
<td>24.8</td>
<td>16.6</td>
</tr>
<tr>
<td>HR (95% CI) p-value</td>
<td>0.66 (0.54, 0.81)</td>
<td>&lt;0.0001</td>
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<tr>
<td><strong>rPFS by BICR</strong></td>
<td></td>
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<tr>
<td>Number of patients with events (%)</td>
<td>157 (39)</td>
<td>218 (55)</td>
</tr>
<tr>
<td>Median PFS (95% CI) (months)</td>
<td>27.6</td>
<td>16.4</td>
</tr>
<tr>
<td>HR (95% CI) p-value (nominal)</td>
<td>0.61 (0.49, 0.74)</td>
<td>&lt;0.0001</td>
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<tr>
<td><strong>OS</strong></td>
<td></td>
<td></td>
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<tr>
<td>Number of patients with events (%)</td>
<td>107 (27)</td>
<td>121 (31)</td>
</tr>
<tr>
<td>Median OS (95% CI) (months)</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>HR (95% CI) p-value</td>
<td>0.86 (0.66, 1.12)</td>
<td>0.29</td>
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<tr>
<td><strong>Time to second progression or death (PFS2)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Number of patients with events (%)</td>
<td>70 (18)</td>
<td>94 (24)</td>
</tr>
<tr>
<td>Median (months)</td>
<td>NR</td>
<td>NR</td>
</tr>
<tr>
<td>HR (95% CI) p-value</td>
<td>0.69 (0.51, 0.94)</td>
<td>0.0184 (nominal)</td>
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<tr>
<td><strong>Time to first subsequent anti-cancer therapy or death (TFST)</strong></td>
<td></td>
<td></td>
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<tr>
<td>Number of patients with events (%)</td>
<td>183 (46)</td>
<td>221 (56)</td>
</tr>
<tr>
<td>Median (months)</td>
<td>25.0</td>
<td>19.9</td>
</tr>
<tr>
<td>HR (95% CI) p-value</td>
<td>0.74 (0.61, 0.90)</td>
<td>0.004 (nominal)</td>
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<tr>
<td><strong>Objective Response Rate</strong></td>
<td></td>
<td></td>
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<tr>
<td>Number of evaluable patients</td>
<td>161</td>
<td>160</td>
</tr>
<tr>
<td>Number of patients with responses (%)</td>
<td>58</td>
<td>48</td>
</tr>
<tr>
<td>Odds ratio (95% CI) p-value</td>
<td>1.60 (1.02, 2.53)</td>
<td>0.0409 (nominal)</td>
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</table>

1. Investigator-assessed PFS data; Interim analysis with 50% maturity (394 events in 796 patients)
2. Assessed by blinded independent central review (BICR)
3. OS analysis was done at 29% maturity (228 events in 796 patients) and boundary for significance was 0.001 (2-sided); statistical significance not reached. Survival follow up continues and further analyses were planned.
4. Not reached
5. Patients with measurable disease at baseline as per RECIST 1.1 criteria, investigator assessment.

LYNPARZA is approved in the U.S. for patients with HRR gene-mutated mCRPC (BRCA-mutated and other HRR gene mutations) who have progressed following prior treatment with enzalutamide or abiraterone and in the European
Union, Japan and China for patients with BRCA-mutated mCRPC who have progressed following prior therapy that included a new hormonal agent (NHA).

About PROpel

PROpel (ClinicalTrials.gov, NCT03732820) is a randomized, double-blind, multi-center Phase 3 trial testing the efficacy, safety and tolerability of LYNPARZA versus placebo when given in addition to abiraterone in men with mCRPC who had not received prior chemotherapy or NHAs in the first-line setting. Men in both treatment groups also received either prednisone or prednisolone twice daily. The primary endpoint is rPFS and secondary endpoints include OS, PFS2 and TFST.

The trial enrolled men independent of HRR gene mutation status. They may have previously been treated with docetaxel at a prior stage of disease. The trial excluded men with prior treatment with abiraterone. Treatment with any other NHA must have been stopped one year or longer prior to randomization. Men must have an Eastern Cooperative Oncology Group performance status of 0-1 and be a candidate for abiraterone treatment with documented evidence of progressive disease.

IMPORTANT SAFETY INFORMATION

CONTRAINDICATIONS

There are no contraindications for LYNPARZA.

WARNINGS AND PRECAUTIONS

Myelodysplastic Syndrome/Acute Myeloid Leukemia (MDS/AML): Occurred in approximately 1.5% of patients exposed to LYNPARZA monotherapy, and the majority of events had a fatal outcome. The median duration of therapy in patients who developed MDS/AML was 2 years (range: <6 months to >10 years). All of these patients had previous chemotherapy with platinum agents and/or other DNA-damaging agents, including radiotherapy.

Do not start LYNPARZA until patients have recovered from hematological toxicity caused by previous chemotherapy (≤Grade 1). Monitor complete blood count for cytopenia at baseline and monthly thereafter for clinically significant changes during treatment. For prolonged hematological toxicities, interrupt LYNPARZA and monitor blood count weekly until recovery.

If the levels have not recovered to Grade 1 or less after 4 weeks, refer the patient to a hematologist for further investigations, including bone marrow analysis and blood sample for cytogenetics. Discontinue LYNPARZA if
MDS/AML is confirmed.

**Pneumonitis:** Occurred in 0.8% of patients exposed to LYNPARZA monotherapy, and some cases were fatal. If patients present with new or worsening respiratory symptoms such as dyspnea, cough, and fever, or a radiological abnormality occurs, interrupt LYNPARZA treatment and initiate prompt investigation. Discontinue LYNPARZA if pneumonitis is confirmed and treat patient appropriately.

**Embryo-Fetal Toxicity:** Based on its mechanism of action and findings in animals, LYNPARZA can cause fetal harm. A pregnancy test is recommended for females of reproductive potential prior to initiating treatment.

Females

Advise females of reproductive potential of the potential risk to a fetus and to use effective contraception during treatment and for 6 months following the last dose.

Males

Advise male patients with female partners of reproductive potential or who are pregnant to use effective contraception during treatment and for 3 months following the last dose of LYNPARZA and to not donate sperm during this time.

**Venous Thromboembolic Events:** Including pulmonary embolism, occurred in 7% of patients with metastatic castration-resistant prostate cancer who received LYNPARZA plus androgen deprivation therapy (ADT) compared to 3.1% of patients receiving enzalutamide or abiraterone plus ADT in the PROfound study. Patients receiving LYNPARZA and ADT had a 6% incidence of pulmonary embolism compared to 0.8% of patients treated with ADT plus either enzalutamide or abiraterone. Monitor patients for signs and symptoms of venous thrombosis and pulmonary embolism, and treat as medically appropriate, which may include long-term anticoagulation as clinically indicated.

**ADVERSE REACTIONS—First-Line Maintenance BRCAm Advanced Ovarian Cancer**

Most common adverse reactions (Grades 1-4) in ≥10% of patients in clinical trials of LYNPARZA in the **first-line maintenance setting** for SOLO-1 were: nausea (77%), fatigue (67%), abdominal pain (45%), vomiting (40%), anemia (38%), diarrhea (37%), constipation (28%), upper respiratory tract infection/influenza/nasopharyngitis/bronchitis (28%), dysgeusia (26%), decreased appetite (20%), dizziness (20%), neutropenia (17%), dyspepsia (17%), dyspnea (15%), leukopenia (13%), UTI (13%), thrombocytopenia (11%), and stomatitis (11%).
Most common laboratory abnormalities (Grades 1-4) in ≥25% of patients in clinical trials of LYNPARZA in the first-line maintenance setting for SOLO-1 were: decrease in hemoglobin (87%), increase in mean corpuscular volume (87%), decrease in leukocytes (70%), decrease in lymphocytes (67%), decrease in absolute neutrophil count (51%), decrease in platelets (35%), and increase in serum creatinine (34%).

**ADVERSE REACTIONS—First-Line Maintenance Advanced Ovarian Cancer in Combination with Bevacizumab**

Most common adverse reactions (Grades 1-4) in ≥10% of patients treated with LYNPARZA/bevacizumab compared to a ≥5% frequency for placebo/bevacizumab in the first-line maintenance setting for PAOLA-1 were: nausea (53%), fatigue (including asthenia) (53%), anemia (41%), lymphopenia (24%), vomiting (22%) and leukopenia (18%). In addition, the most common adverse reactions (≥10%) for patients receiving LYNPARZA/bevacizumab irrespective of the frequency compared with the placebo/bevacizumab arm were: diarrhea (18%), neutropenia (18%), urinary tract infection (15%) and headache (14%).

In addition, venous thromboembolic events occurred more commonly in patients receiving LYNPARZA/bevacizumab (5%) than in those receiving placebo/bevacizumab (1.9%).

Most common laboratory abnormalities (Grades 1-4) in ≥25% of patients for LYNPARZA in combination with bevacizumab in the first-line maintenance setting for PAOLA-1 were: increase in mean corpuscular volume (89%/82%), decrease in hemoglobin (83%/82%), decrease in leukocytes (69%/58%), decrease in lymphocytes (67%/52%), decrease in absolute neutrophil count (35%) and decrease in platelets (35%).

**ADVERSE REACTIONS—Maintenance Recurrent Ovarian Cancer**

Most common adverse reactions (Grades 1-4) in ≥20% of patients in clinical trials of LYNPARZA in the maintenance setting for SOLO-2 were: nausea (76%), fatigue (including asthenia) (66%), anemia (44%), vomiting (37%), nasopharyngitis/upper respiratory tract infection (URI)/influenza (36%), diarrhea (33%), arthralgia/myalgia (30%), dysgeusia (27%), headache (26%), decreased appetite (22%), and stomatitis (20%).

Study 19: nausea (71%), fatigue (including asthenia) (63%), vomiting (35%), diarrhea (28%), anemia (23%), respiratory tract infection (22%), constipation (22%), headache (21%), decreased appetite (21%) and dyspepsia (20%).

Most common laboratory abnormalities (Grades 1-4) in ≥25% of patients in clinical trials of LYNPARZA in the maintenance setting (SOLO-2/Study 19) were: increase in mean corpuscular volume (89%/82%), decrease in hemoglobin (83%/82%), decrease in leukocytes (69%/58%), decrease in lymphocytes (67%/52%), decrease in
absolute neutrophil count (51%/47%), increase in serum creatinine (44%/45%), and decrease in platelets (42%/36%).

**ADVERSE REACTIONS—Advanced gBRCAm Ovarian Cancer**

Most common adverse reactions (Grades 1-4) in ≥20% of patients in clinical trials of LYNPARZA for advanced gBRCAm ovarian cancer after 3 or more lines of chemotherapy (pooled from 6 studies) were: fatigue/asthenia (66%), nausea (64%), vomiting (43%), anemia (34%), diarrhea (31%), nasopharyngitis/upper respiratory tract infection (URI) (26%), dyspepsia (25%), myalgia (22%), decreased appetite (22%), and arthralgia/musculoskeletal pain (21%).

Most common laboratory abnormalities (Grades 1-4) in ≥25% of patients in clinical trials of LYNPARZA for advanced gBRCAm ovarian cancer (pooled from 6 studies) were: decrease in hemoglobin (90%), mean corpuscular volume elevation (57%), decrease in lymphocytes (56%), increase in serum creatinine (30%), decrease in platelets (30%), and decrease in absolute neutrophil count (25%).

**ADVERSE REACTIONS—gBRCAm, HER2-Negative Metastatic Breast Cancer**

Most common adverse reactions (Grades 1-4) in ≥20% of patients in OlympiAD were: nausea (58%), anemia (40%), fatigue (including asthenia) (37%), vomiting (30%), neutropenia (27%), respiratory tract infection (27%), leukopenia (25%), diarrhea (21%), and headache (20%).

Most common laboratory abnormalities (Grades 1-4) in ≥25% of patients in OlympiAD were: decrease in hemoglobin (82%), decrease in lymphocytes (73%), decrease in leukocytes (71%), increase in mean corpuscular volume (71%), decrease in absolute neutrophil count (46%), and decrease in platelets (33%).

**ADVERSE REACTIONS—First-Line Maintenance gBRCAm Metastatic Pancreatic Adenocarcinoma**

Most common adverse reactions (Grades 1-4) in ≥10% of patients in clinical trials of LYNPARZA in the first-line maintenance setting for POLO were: fatigue (60%), nausea (45%), abdominal pain (34%), diarrhea (29%), anemia (27%), decreased appetite (25%), constipation (23%), vomiting (20%), back pain (19%), arthralgia (15%), rash (15%), thrombocytopenia (14%), dyspnea (13%), neutropenia (12%), nasopharyngitis (12%), dysgeusia (11%), and stomatitis (10%).

Most common laboratory abnormalities (Grades 1-4) in ≥25% of patients in clinical trials of LYNPARZA in the first-line maintenance setting for POLO were: increase in serum creatinine (99%), decrease in hemoglobin (86%), increase in mean corpuscular volume (71%), decrease in lymphocytes (61%), decrease in platelets (56%), decrease
in leukocytes (50%), and decrease in absolute neutrophil count (25%).

ADVERSE REACTIONS—HRR Gene-mutated Metastatic Castration Resistant Prostate Cancer

Most common adverse reactions (Grades 1-4) in ≥10% of patients in clinical trials of LYNPARZA for PROfound were: anemia (46%), fatigue (including asthenia) (41%), nausea (41%), decreased appetite (30%), diarrhea (21%), vomiting (18%), thrombocytopenia (12%), cough (11%), and dyspnea (10%).

Most common laboratory abnormalities (Grades 1-4) in ≥25% of patients in clinical trials of LYNPARZA for PROfound were: decrease in hemoglobin (98%), decrease in lymphocytes (62%), decrease in leukocytes (53%), and decrease in absolute neutrophil count (34%).

DRUG INTERACTIONS

Anticancer Agents: Clinical studies of LYNPARZA with other myelosuppressive anticancer agents, including DNA-damaging agents, indicate a potentiation and prolongation of myelosuppressive toxicity.

CYP3A Inhibitors: Avoid coadministration of strong or moderate CYP3A inhibitors when using LYNPARZA. If a strong or moderate CYP3A inhibitor must be coadministered, reduce the dose of LYNPARZA. Advise patients to avoid grapefruit, grapefruit juice, Seville oranges, and Seville orange juice during LYNPARZA treatment.

CYP3A Inducers: Avoid coadministration of strong or moderate CYP3A inducers when using LYNPARZA.

USE IN SPECIFIC POPULATIONS

Lactation: No data are available regarding the presence of olaparib in human milk, its effects on the breastfed infant or on milk production. Because of the potential for serious adverse reactions in the breastfed infant, advise a lactating woman not to breastfeed during treatment with LYNPARZA and for 1 month after receiving the final dose.

Pediatric Use: The safety and efficacy of LYNPARZA have not been established in pediatric patients.

Hepatic Impairment: No adjustment to the starting dose is required in patients with mild or moderate hepatic impairment (Child-Pugh classification A and B). There are no data in patients with severe hepatic impairment (Child-Pugh classification C).

Renal Impairment: No dosage modification is recommended in patients with mild renal impairment (CLcr 51-80 mL/min estimated by Cockcroft-Gault). In patients with moderate renal impairment (CLcr 31-50 mL/min), reduce the
dose of LYNPARZA to 200 mg twice daily. There are no data in patients with severe renal impairment or end-stage renal disease (CLcr ≤30 mL/min).

**INDICATIONS for LYNPARZA in the United States**

LYNPARZA is a poly (ADP-ribose) polymerase (PARP) inhibitor indicated:

**First-Line Maintenance BRCAm Advanced Ovarian Cancer**

For the maintenance treatment of adult patients with deleterious or suspected deleterious germline or somatic BRCA-mutated (gBRCAm or sBRCAm) advanced epithelial ovarian, fallopian tube, or primary peritoneal cancer who are in complete or partial response to first-line platinum-based chemotherapy. Select patients for therapy based on an FDA-approved companion diagnostic for LYNPARZA.

**First-Line Maintenance HRD-Positive Advanced Ovarian Cancer in Combination with Bevacizumab**

In combination with bevacizumab for the maintenance treatment of adult patients with advanced epithelial ovarian, fallopian tube or primary peritoneal cancer who are in complete or partial response to first-line platinum-based chemotherapy and whose cancer is associated with homologous recombination deficiency (HRD) positive status defined by either:

- a deleterious or suspected deleterious BRCA mutation and/or
- genomic instability

Select patients for therapy based on an FDA-approved companion diagnostic for LYNPARZA.

**Maintenance Recurrent Ovarian Cancer**

For the maintenance treatment of adult patients with recurrent epithelial ovarian, fallopian tube, or primary peritoneal cancer, who are in complete or partial response to platinum-based chemotherapy.

**Advanced gBRCAm Ovarian Cancer**

For the treatment of adult patients with deleterious or suspected deleterious germline BRCA-mutated (gBRCAm) advanced ovarian cancer who have been treated with 3 or more prior lines of chemotherapy. Select patients for therapy based on an FDA-approved companion diagnostic for LYNPARZA.
gBRCAm, HER2-Negative Metastatic Breast Cancer

For the treatment of adult patients with deleterious or suspected deleterious gBRCAm, human epidermal growth factor receptor 2 (HER2)-negative metastatic breast cancer who have been treated with chemotherapy in the neoadjuvant, adjuvant, or metastatic setting. Patients with hormone receptor (HR)-positive breast cancer should have been treated with a prior endocrine therapy or be considered inappropriate for endocrine therapy. Select patients for therapy based on an FDA-approved companion diagnostic for LYNPARZA.

First-Line Maintenance gBRCAm Metastatic Pancreatic Cancer

For the maintenance treatment of adult patients with deleterious or suspected deleterious gBRCAm metastatic pancreatic adenocarcinoma whose disease has not progressed on at least 16 weeks of a first-line platinum-based chemotherapy regimen. Select patients for therapy based on an FDA-approved companion diagnostic for LYNPARZA.

HRR Gene-mutated Metastatic Castration Resistant Prostate Cancer

For the treatment of adult patients with deleterious or suspected deleterious germline or somatic homologous recombination repair (HRR) gene-mutated metastatic castration-resistant prostate cancer (mCRPC) who have progressed following prior treatment with enzalutamide or abiraterone. Select patients for therapy based on an FDA-approved companion diagnostic for LYNPARZA.

About LYNPARZA® (olaparib)

LYNPARZA is a first-in-class PARP inhibitor and the first targeted treatment to potentially exploit DNA damage response (DDR) pathway deficiencies, such as BRCA mutations, to preferentially kill cancer cells. Inhibition of PARP with LYNPARZA leads to the trapping of PARP bound to DNA single-strand breaks, stalling of replication forks, their collapse and the generation of DNA double-strand breaks and cancer cell death. LYNPARZA is being tested in a range of tumor types with defects and dependencies in the DDR.

LYNPARZA, which is being jointly developed and commercialized by AstraZeneca and Merck, has a broad and advanced clinical trial development program, and AstraZeneca and Merck are working together to understand how it may affect multiple PARP-dependent tumors as a monotherapy and in combination across multiple cancer types.

About Metastatic Castration-Resistant Prostate Cancer

Prostate cancer is the second most common cancer in men globally and is associated with a significant mortality
rate. Development of prostate cancer is often driven by male sex hormones called androgens, including
testosterone. In patients with mCRPC, their prostate cancer grows and spreads to other parts of the body, despite
the use of androgen-deprivation therapy to block the action of male sex hormones. Approximately 10-20% of
patients with advanced prostate cancer will develop CRPC within five years, and at least 84% of these patients will
have metastases at the time of CRPC diagnosis. Of patients with no metastases at CRPC diagnosis, 33% are likely to
develop metastases within two years.

About the AstraZeneca and Merck Strategic Oncology Collaboration

In July 2017, AstraZeneca and Merck, known as MSD outside the United States and Canada, announced a global
strategic oncology collaboration to co-develop and co-commercialize certain oncology products including
LYNPARZA, the world’s first PARP inhibitor, for multiple cancer types. Working together, the companies will develop
these products in combination with other potential new medicines and as monotherapies. Independently, the
companies will develop these oncology products in combination with their respective PD-L1 and PD-1 medicines.

Merck’s Focus on Cancer

Our goal is to translate breakthrough science into innovative oncology medicines to help people with cancer
worldwide. At Merck, the potential to bring new hope to people with cancer drives our purpose and supporting
accessibility to our cancer medicines is our commitment. As part of our focus on cancer, Merck is committed to
exploring the potential of immuno-oncology with one of the largest development programs in the industry across
more than 30 tumor types. We also continue to strengthen our portfolio through strategic acquisitions and are
prioritizing the development of several promising oncology candidates with the potential to improve the treatment
of advanced cancers. For more information about our oncology clinical trials, visit www.merck.com/clinicaltrials.

About Merck

For over 130 years, Merck, known as MSD outside the United States and Canada, has been inventing for life,
bringing forward medicines and vaccines for many of the world’s most challenging diseases in pursuit of our
mission to save and improve lives. We demonstrate our commitment to patients and population health by
increasing access to health care through far-reaching policies, programs and partnerships. Today, Merck continues
to be at the forefront of research to prevent and treat diseases that threaten people and animals – including
cancer, infectious diseases such as HIV and Ebola, and emerging animal diseases – as we aspire to be the premier
research-intensive biopharmaceutical company in the world. For more information, visit www.merck.com and
connect with us on Twitter, Facebook, Instagram, YouTube and LinkedIn.

Forward-Looking Statement of Merck & Co., Inc., Kenilworth, N.J., USA
This news release of Merck & Co., Inc., Kenilworth, N.J., USA (the “company”) includes “forward-looking statements” within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. These statements are based upon the current beliefs and expectations of the company’s management and are subject to significant risks and uncertainties. There can be no guarantees with respect to pipeline products that the products will receive the necessary regulatory approvals or that they will prove to be commercially successful. If underlying assumptions prove inaccurate or risks or uncertainties materialize, actual results may differ materially from those set forth in the forward-looking statements.

Risks and uncertainties include but are not limited to, general industry conditions and competition; general economic factors, including interest rate and currency exchange rate fluctuations; the impact of the global outbreak of novel coronavirus disease (COVID-19); the impact of pharmaceutical industry regulation and health care legislation in the United States and internationally; global trends toward health care cost containment; technological advances, new products and patents attained by competitors; challenges inherent in new product development, including obtaining regulatory approval; the company's ability to accurately predict future market conditions; manufacturing difficulties or delays; financial instability of international economies and sovereign risk; dependence on the effectiveness of the company’s patents and other protections for innovative products; and the exposure to litigation, including patent litigation, and/or regulatory actions.

The company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the company's 2020 Annual Report on Form 10-K and the company's other filings with the Securities and Exchange Commission (SEC) available at the SEC's Internet site (www.sec.gov).

Please click here for complete Prescribing Information, including Patient Information (Medication Guide).

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