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Updated Data from Phase IIIb MAGNIFY Study of REVLIMID (lenalidomide) and Rituximab Combination (R2) Show Clinical Activity and Responses in Relapsed/Refractory Follicular and Marginal Zone Lymphoma

Interim data from the study evaluating the investigational chemotherapy-free R² combination regimen, presented at ASCO and expanded data presented at ICML

Results showed clinical activity across indolent non-Hodgkin lymphomas, marginal zone and follicular histologies, as well as responses in poor risk patient subpopulations including early relapsing patients and patients who were refractory to multiple lines of therapy

SUMMIT, N.J.--(BUSINESS WIRE)-- Celgene Corporation (NASDAQ: CELG) today announced results from an interim analysis of MAGNIFY, a phase IIIb, randomized, open-label, multicenter study of REVLIMID (lenalidomide) plus rituximab (R²) combination therapy in patients with relapsed or refractory marginal zone lymphoma (MZL). Results were presented at the International Conference on Malignant Lymphoma (ICML) in Lugano, Switzerland and expanded upon data presented earlier in the month at the American Society of Clinical Oncology (ASCO) meeting in Chicago, Ill.

The MAGNIFY study continues to evaluate the clinical activity of 12 cycles of R² combination therapy followed by randomization to either 18 cycles of R² maintenance or 18 cycles of rituximab monotherapy, in patients with relapsed or refractory follicular lymphoma (FL), marginal zone lymphoma (MZL) or mantle cell lymphoma (MCL). Approximately 500 patients are planned to be enrolled in the study. The primary endpoint is progression-free survival (PFS). Secondary endpoints include overall survival (OS), overall response rate (ORR), complete response (CR), improvement of response (IOR), duration of response (DOR) and duration of complete response (DOCR), time to next lymphoma treatment (TTNLT), time to histological transformation (TTHT), safety and exploratory quality of life measures. Enrollment in the MAGNIFY study is ongoing.

"Interim data from the MAGNIFY study continue to show the clinical potential for the R² combination across a broad range of lymphomas," said Michael Pehl, President, Hematology/Oncology at Celgene. "As we await data from our late-stage programs, including the phase III AUGMENT and RELEVANCE studies, we hope that the growing volume of evidence for R² may lead to new options for patients that offer an alternative to traditional cytotoxic chemotherapies."

At ASCO, interim data were presented from an analysis of a subset of patients from the MAGNIFY study with relapsed or refractory FL (n=160) with early relapse (ER, n=52) and double-refractory (DR, n=50) disease. At the January 9, 2017 data cut-off, the 1-year PFS for all FL patients was 70%, with 65% for DR patients and 49% for ER patients. Additionally, evaluable FL patients (n=128) had an ORR of 66% with a CR/CRu rate of 38%. For DR patients (n=42), ORR was 45% with a CR/CRu rate of 21% and for ER patients (n=43), ORR was 47% with a CR/CRu rate of 21%. Median DOR was not met at a median follow-up of 10.2 months.

Most common grade 3 or 4 adverse events observed in the study for all FL patients, DR patients and ER patients, respectively, were neutropenia (29%, 42%, 37%), fatigue (6%, 4%, 8%), leukopenia (5%, 8%, 10%), thrombocytopenia (4%, 8%, 4%) and lymphopenia (3%, 6%, 4%).

Data being presented at ICML in a separate analysis focused on patients with MZL (n=38), including nodal MZL (n=18), splenic MZL (n=10) and mucosa-associated lymphoid tissue (MALT) lymphoma (n=10). At a median follow-up of 13.8 months from initiation of therapy with the R² combination, evaluable patients with MZL (n=32) achieved an ORR of 66% with a CR/CRu rate of 44%. Evaluable nodal MZL patients (n=14) had an ORR of 57% with a CR/CRu rate of 57%. Evaluable splenic MZL patients (n=8) had an ORR of 63% with a CR of 25%; and evaluable MALT patients (n=10) had an ORR of 80% with a CR/CRu rate of 40%. Median duration of response was not reached for any group.

The most common grade 3 or 4 adverse events observed in patients with MZL were neutropenia (32%), thrombocytopenia

(16%) and leukopenia (11%).

"The chemotherapy-free combination of lenalidomide and rituximab, with complementary mechanisms of action that are thought to enhance antibody dependent cellular cytotoxicity, continues to show encouraging activity and a tolerable safety profile in indolent lymphomas, and particularly in difficult-to-treat patient subsets," said David J. Andorsky, M.D., co-principal investigator of the study and medical oncologist at the Rocky Mountain Cancer Centers in Boulder, CO. "These results in patients who had failed multiple therapies or relapsed early, as well as the activity in marginal zone patients merit further study in this area of indolent lymphoma."

About MAGNIFY

MAGNIFY (NCT01996865) is a phase IIIb, multicenter, open-label study of patients with grades 1-3b or transformed FL, MZL, or MCL who received ≥ 1 prior therapy and had stage I-IV, measurable disease. Approximately 500 patients are planned for enrollment in 12 cycles of R² induction, with a projected 314 patients with \geq SD after induction randomized (1:1) to two maintenance arms. Induction included oral lenalidomide 20 mg/day, days 1-21 per 28-day cycle (d1-21/28) plus intravenous rituximab 375 mg/m², days 1, 8, 15, and 22 of cycle 1 and day 1 of cycles 3, 5, 7, 9, and 11 (28-day cycles). Patients are then randomized to maintenance lenalidomide 10 mg/day, d1-21/28, cycles 13-30, plus rituximab 375 mg/m², day 1 of cycles 13, 15, 17, 19, 21, 23, 25, 27, and 29 (R², Arm A), or rituximab alone (same schedule, Arm B). Patients receiving R² maintenance after 18 cycles may continue maintenance lenalidomide monotherapy 10 mg/day, d1-21/28 (per patient and/or investigator discretion), until disease progression as tolerated. Patients will be followed for ≥ 5 years after the last patient initiates induction therapy.

About Follicular and Marginal Zone Lymphomas

FL is the most common indolent (slow-growing) form of NHL, accounting for approximately 22% of all B-cell Non-Hodgkin lymphoma (NHL) patients. Most patients present with advanced disease usually when lymphoma-related symptoms appear (e.g., nodal disease, B symptoms, cytopenia) and receive systemic chemoimmunotherapy. While FL patients are generally responsive to initial treatment, the disease course is characterized by recurrent relapses over time with shorter remission periods. MZL are a heterogeneous group of indolent lymphomas that account for 8% of all NHL. While often treated like FL, MZL has important differences in clinical presentation and pathogenesis. Patients with MZL have historically been grouped within studies of mixed indolent NHL histologies, and large studies are lacking to validate appropriate treatment for MZL patients.

REVLIMID was granted Orphan Drug Designation for the treatment of extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue in April 2015.

REVLIMID is not approved for combination use with rituximab for any purpose or for the treatment of follicular lymphoma or marginal zone lymphoma.

About REVLIMID[®]

REVLIMID[®] (lenalidomide) in combination with dexamethasone (dex) is indicated for the treatment of patients with multiple myeloma (MM)

REVLIMID is indicated as maintenance therapy in patients with MM following autologous hematopoietic stem cell transplantation (auto-HSCT)

REVLIMID[®] is indicated for the treatment of patients with transfusion-dependent anemia due to low-or intermediate-1-risk myelodysplastic syndromes (MDS) associated with a deletion 5q cytogenetic abnormality with or without additional cytogenetic abnormalities

REVLIMID[®] is indicated for the treatment of patients with mantle cell lymphoma (MCL) whose disease has relapsed or progressed after two prior therapies, one of which included bortezomib

REVLIMID is not indicated and is not recommended for the treatment of patients with chronic lymphocytic leukemia (CLL) outside of controlled clinical trials

Important Safety Information

WARNING: EMBRYO-FETAL TOXICITY, HEMATOLOGIC TOXICITY, and VENOUS and ARTERIAL THROMBOEMBOLISM

Embryo-Fetal Toxicity

Do not use REVLIMID during pregnancy. Lenalidomide, a thalidomide analogue, caused limb abnormalities in a developmental monkey study. Thalidomide is a known human teratogen that causes severe life-threatening human birth defects. If lenalidomide is used during pregnancy, it may cause birth defects or embryo-fetal death. In females of reproductive potential, obtain 2 negative pregnancy tests before starting REVLIMID treatment. Females of reproductive potential must use 2 forms of contraception or continuously abstain from heterosexual sex during and for 4 weeks after REVLIMID treatment. To avoid embryo-fetal exposure to lenalidomide, REVLIMID is only available through a restricted distribution program, the REVLIMID REMS[®] program).

Information about the REVLIMID REMS[®] program is available at www.celgeneriskmanagement.com or by calling the manufacturer's toll-free number 1-888-423-5436.

Hematologic Toxicity (Neutropenia and Thrombocytopenia)

REVLIMID can cause significant neutropenia and thrombocytopenia. Eighty percent of patients with del 5q MDS had to have a dose delay/reduction during the major study. Thirty-four percent of patients had to have a second dose delay/reduction. Grade 3 or 4 hematologic toxicity was seen in 80% of patients enrolled in the study. Patients on therapy for del 5q MDS should have their complete blood counts monitored weekly for the first 8 weeks of therapy and at least monthly thereafter. Patients may require dose interruption and/or reduction. Patients may require use of blood product support and/or growth factors.

Venous and Arterial Thromboembolism

REVLIMID has demonstrated a significantly increased risk of deep vein thrombosis (DVT) and pulmonary embolism (PE), as well as risk of myocardial infarction and stroke in patients with MM who were treated with REVLIMID and dexamethasone therapy. Monitor for and advise patients about signs and symptoms of thromboembolism. Advise patients to seek immediate medical care if they develop symptoms such as shortness of breath, chest pain, or arm or leg swelling. Thromboprophylaxis is recommended and the choice of regimen should be based on an assessment of the patient's underlying risks.

CONTRAINDICATIONS

Pregnancy: REVLIMID can cause fetal harm when administered to a pregnant female and is contraindicated in females who are pregnant. If this drug is used during pregnancy or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential risk to the fetus

Allergic Reactions: REVLIMID is contraindicated in patients who have demonstrated hypersensitivity (e.g., angioedema, Stevens-Johnson syndrome, toxic epidermal necrolysis) to lenalidomide

WARNINGS AND PRECAUTIONS

Embryo-Fetal Toxicity: See Boxed WARNINGS

- 1 **Females of Reproductive Potential: See Boxed WARNINGS**
- 1 **Males:** Lenalidomide is present in the semen of patients receiving the drug. Males must always use a latex or synthetic condom during any sexual contact with females of reproductive potential while taking REVLIMID and for up to 4 weeks after discontinuing REVLIMID, even if they have undergone a successful vasectomy. Male patients taking REVLIMID must not donate sperm
- 1 **Blood Donation:** Patients must not donate blood during treatment with REVLIMID and for 4 weeks following discontinuation of the drug because the blood might be given to a pregnant female patient whose fetus must not be exposed to REVLIMID

REVLIMID REMS[®] Program: See Boxed WARNINGS: Prescribers and pharmacies must be certified with the REVLIMID REMS program by enrolling and complying with the REMS requirements; pharmacies must only dispense to patients who are authorized to receive REVLIMID. Patients must sign a Patient-Physician Agreement Form and comply with REMS

requirements; female patients of reproductive potential who are not pregnant must comply with the pregnancy testing and contraception requirements and males must comply with contraception requirements

Hematologic Toxicity: REVLIMID can cause significant neutropenia and thrombocytopenia. Monitor patients with neutropenia for signs of infection. Advise patients to observe for bleeding or bruising, especially with use of concomitant medications that may increase risk of bleeding. **MM:** Patients taking REVLIMID/dex or REVLIMID maintenance therapy should have their complete blood counts (CBC) assessed every 7 days for the first 2 cycles, on days 1 and 15 of cycle 3, and every 28 days thereafter. **MDS:** Patients on therapy for del 5q MDS should have their complete blood counts monitored weekly for the first 8 weeks of therapy and at least monthly thereafter. Patients may require dose interruption and/or dose reduction. Please see the **Boxed WARNINGS** for further information. **MCL:** Patients taking REVLIMID for MCL should have their CBCs monitored weekly for the first cycle (28 days), every 2 weeks during cycles 2-4, and then monthly thereafter. Patients may require dose interruption and/or dose reduction

Venous and Arterial Thromboembolism: See Boxed WARNINGS: Venous thromboembolic events (DVT and PE) and arterial thromboses (MI and CVA) are increased in patients treated with REVLIMID. Patients with known risk factors, including prior thrombosis, may be at greater risk and actions should be taken to try to minimize all modifiable factors (e.g., hyperlipidemia, hypertension, smoking). Thromboprophylaxis is recommended and the regimen should be based on patient's underlying risks. ESAs and estrogens may further increase the risk of thrombosis and their use should be based on a benefit-risk decision

Increased Mortality in Patients with CLL: In a clinical trial in the first-line treatment of patients with CLL, single agent REVLIMID therapy increased the risk of death as compared to single agent chlorambucil. Serious adverse cardiovascular reactions, including atrial fibrillation, myocardial infarction, and cardiac failure, occurred more frequently in the REVLIMID arm. REVLIMID is not indicated and not recommended for use in CLL outside of controlled clinical trials

Second Primary Malignancies (SPM): In clinical trials in patients with MM receiving REVLIMID, an increase of hematologic plus solid tumor SPM, notably AML and MDS, have been observed. Monitor patients for the development of SPM. Take into account both the potential benefit of REVLIMID and risk of SPM when considering treatment

Hepatotoxicity: Hepatic failure, including fatal cases, has occurred in patients treated with REVLIMID/dex. Pre-existing viral liver disease, elevated baseline liver enzymes, and concomitant medications may be risk factors. Monitor liver enzymes periodically. Stop REVLIMID upon elevation of liver enzymes. After return to baseline values, treatment at a lower dose may be considered

Allergic Reactions: Angioedema and serious dermatologic reactions including Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) have been reported. These events can be fatal. Patients with a prior history of Grade 4 rash associated with thalidomide treatment should not receive REVLIMID. REVLIMID interruption or discontinuation should be considered for Grade 2-3 skin rash. REVLIMID must be discontinued for angioedema, Grade 4 rash, exfoliative or bullous rash, or if SJS or TEN is suspected and should not be resumed following discontinuation for these reactions. REVLIMID capsules contain lactose; risk-benefit of treatment should be evaluated in patients with lactose intolerance

Tumor Lysis Syndrome (TLS): Fatal instances of TLS have been reported during treatment with lenalidomide. The patients at risk of TLS are those with high tumor burden prior to treatment. These patients should be monitored closely and appropriate precautions taken

Tumor Flare Reaction (TFR): TFR has occurred during investigational use of lenalidomide for CLL and lymphoma. Monitoring and evaluation for TFR is recommended in patients with MCL. Tumor flare may mimic the progression of disease (PD). In patients with Grade 3 or 4 TFR, it is recommended to withhold treatment with REVLIMID until TFR resolves to \leq Grade 1. REVLIMID may be continued in patients with Grade 1 and 2 TFR without interruption or modification, at the physician's discretion

Impaired Stem Cell Mobilization: A decrease in the number of CD34+ cells collected after treatment (> 4 cycles) with REVLIMID has been reported. Consider early referral to transplant center to optimize timing of the stem cell collection

Thyroid Disorders: Both hypothyroidism and hyperthyroidism have been reported. Measure thyroid function before start of REVLIMID treatment and during therapy

ADVERSE REACTIONS

Multiple Myeloma

- 1 **In newly diagnosed:** The most frequently reported Grade 3 or 4 reactions included neutropenia, anemia, thrombocytopenia, pneumonia, asthenia, fatigue, back pain, hypokalemia, rash, cataract, lymphopenia, dyspnea,

DVT, hyperglycemia, and leukopenia. The highest frequency of infections occurred in Arm Rd Continuous (75%) compared to Arm MPT (56%). There were more Grade 3 and 4 and serious adverse reactions of infection in Arm Rd Continuous than either Arm MPT or Rd18

- | The most common adverse reactions reported in $\geq 20\%$ (Arm Rd Continuous): diarrhea (46%), anemia (44%), neutropenia (35%), fatigue (33%), back pain (32%), asthenia (28%), insomnia (28%), rash (26%), decreased appetite (23%), cough (23%), dyspnea (22%), pyrexia (21%), abdominal pain (21%), muscle spasms (20%), and thrombocytopenia (20%)
- | **Maintenance Therapy Post Auto-HSCT:** The most frequently reported Grade 3 or 4 reactions in $\geq 20\%$ (REVLIMID arm) included neutropenia, thrombocytopenia, and leukopenia. The serious adverse reactions of lung infection and neutropenia (more than 4.5%) occurred in the REVLIMID arm
- | The most frequently reported adverse reactions in $\geq 20\%$ (REVLIMID arm) across both maintenance studies (Study 1, Study 2) were neutropenia (79%, 61%), thrombocytopenia (72%, 24%), leukopenia (23%, 32%), anemia (21%, 9%), upper respiratory tract infection (27%, 11%), bronchitis (5%, 47%), nasopharyngitis (2%, 35%), cough (10%, 27%), gastroenteritis (0%, 23%), diarrhea (55%, 39%), rash (32%, 8%), fatigue (23%, 11%), asthenia (0%, 30%), muscle spasm (0%, 33%), and pyrexia (8%, 21%)
- | **After at least one prior therapy:** The most common adverse reactions reported in $\geq 20\%$ (REVLIMID/dex vs dex/placebo): fatigue (44% vs 42%), neutropenia (42% vs 6%), constipation (41% vs 21%), diarrhea (39% vs 27%), muscle cramp (33% vs 21%), anemia (31% vs 24%), pyrexia (28% vs 23%), peripheral edema (26% vs 21%), nausea (26% vs 21%), back pain (26% vs 19%), upper respiratory tract infection (25% vs 16%), dyspnea (24% vs 17%), dizziness (23% vs 17%), thrombocytopenia (22% vs 11%), rash (21% vs 9%), tremor (21% vs 7%), and weight decreased (20% vs 15%)

Myelodysplastic Syndromes

- | Grade 3 and 4 adverse events reported in $\geq 5\%$ of patients with del 5q MDS were neutropenia (53%), thrombocytopenia (50%), pneumonia (7%), rash (7%), anemia (6%), leukopenia (5%), fatigue (5%), dyspnea (5%), and back pain (5%)
- | Adverse events reported in $\geq 15\%$ of del 5q MDS patients (REVLIMID): thrombocytopenia (61.5%), neutropenia (58.8%), diarrhea (49%), pruritus (42%), rash (36%), fatigue (31%), constipation (24%), nausea (24%), nasopharyngitis (23%), arthralgia (22%), pyrexia (21%), back pain (21%), peripheral edema (20%), cough (20%), dizziness (20%), headache (20%), muscle cramp (18%), dyspnea (17%), pharyngitis (16%), epistaxis (15%), asthenia (15%), upper respiratory tract infection (15%)

Mantle Cell Lymphoma

- | Grade 3 and 4 adverse events reported in $\geq 5\%$ of patients treated with REVLIMID in the MCL trial (N=134) included neutropenia (43%), thrombocytopenia (28%), anemia (11%), pneumonia (9%), leukopenia (7%), fatigue (7%), diarrhea (6%), dyspnea (6%), and febrile neutropenia (6%)
- | Adverse events reported in $\geq 15\%$ of patients treated with REVLIMID in the MCL trial included neutropenia (49%), thrombocytopenia (36%), fatigue (34%), anemia (31%), diarrhea (31%), nausea (30%), cough (28%), pyrexia (23%), rash (22%), dyspnea (18%), pruritus (17%), peripheral edema (16%), constipation (16%), and leukopenia (15%)

DRUG INTERACTIONS

Periodic monitoring of digoxin plasma levels is recommended due to increased C_{max} and AUC with concomitant REVLIMID therapy. Patients taking concomitant therapies such as erythropoietin stimulating agents or estrogen containing therapies may have an increased risk of thrombosis. It is not known whether there is an interaction between dex and warfarin. Close monitoring of PT and INR is recommended in patients with MM taking concomitant warfarin

USE IN SPECIFIC POPULATIONS:

- | **PREGNANCY: See Boxed WARNINGS:** If pregnancy does occur during treatment, immediately discontinue the drug and refer patient to an obstetrician/gynecologist experienced in reproductive toxicity for further evaluation and counseling. There is a REVLIMID pregnancy exposure registry that monitors pregnancy outcomes in females exposed to REVLIMID during pregnancy as well as female partners of male patients who are exposed to REVLIMID. This registry is also used to understand the root cause for the pregnancy. Report any suspected fetal exposure to REVLIMID to the FDA via the MedWatch program at 1-800-FDA-1088 and also to Celgene Corporation at 1-888-423-5436
- | **LACTATION:** There is no information regarding the presence of lenalidomide in human milk, the effects of REVLIMID

on the breastfed infant, or the effects of REVLIMID on milk production. Because many drugs are excreted in human milk and because of the potential for adverse reactions in breastfed infants from REVLIMID, advise female patients not to breastfeed during treatment with REVLIMID

- | **PEDIATRIC USE:** Safety and effectiveness have not been established in pediatric patients
- | **RENAL IMPAIRMENT:** Adjust the starting dose of REVLIMID based on the creatinine clearance value and for patients on dialysis

Please see full [Prescribing Information](#), including **Boxed WARNINGS**.

About Celgene

Celgene Corporation, headquartered in Summit, New Jersey, is an integrated global biopharmaceutical company engaged primarily in the discovery, development and commercialization of innovative therapies for the treatment of cancer and inflammatory diseases through next-generation solutions in protein homeostasis, immuno-oncology, epigenetics, immunology and neuro-inflammation. For more information, please visit www.celgene.com. Follow Celgene on social media: [@Celgene](#), [Pinterest](#), [LinkedIn](#), [Facebook](#) and [YouTube](#).

FORWARD-LOOKING STATEMENTS

This press release contains forward-looking statements, which are generally statements that are not historical facts. Forward-looking statements can be identified by the words "expects," "anticipates," "believes," "intends," "estimates," "plans," "will," "outlook" and similar expressions. Forward-looking statements are based on management's current plans, estimates, assumptions and projections, and speak only as of the date they are made. Celgene undertakes no obligation to update any forward-looking statement in light of new information or future events, except as otherwise required by law. Forward-looking statements involve inherent risks and uncertainties, most of which are difficult to predict and are generally beyond our control. Actual results or outcomes may differ materially from those implied by the forward-looking statements as a result of the impact of a number of factors, many of which are discussed in more detail in Celgene's Annual Report on Form 10-K and other reports filed with the Securities and Exchange Commission.

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