ImmunoGen Presents Findings from Newly Diagnosed Acute Myeloid Leukemia Cohorts in Phase 1b/2 Study of Pivekimab Sunirine in Combination with Azacitidine and Venetoclax at ASH

December 10, 2023

Pivekimab Triplet Demonstrates Encouraging CR, Composite CR, and MRD Negativity Rates; Broad Anti-Leukemia Activity Observed Across All Molecular Subsets Evaluated

Pivekimab-Containing Triplet Well-Tolerated with Manageable Safety Profile

Data Support Continued Development of Triplet; Enrollment and Follow-Up Ongoing

WALTHAM, Mass.--(BUSINESS WIRE)--Dec. 10, 2023-- ImmunoGen Inc. (Nasdaq: IMGN), a leader in the expanding field of antibody-drug conjugates (ADCs) for the treatment of cancer, today announced new safety and efficacy findings from the newly diagnosed (ND) cohorts of the Phase 1b/2 study of pivekimab sunirine (pivekimab) in combination with azacitidine (Vidaza®) and venetoclax (Venclexta®), (pivekimab triplet) in patients with ND acute myeloid leukemia (AML). These findings will be presented in a poster session at the 65th American Society of Hematology (ASH) Annual Meeting in San Diego, California.

“We are pleased to share these new findings at ASH, which demonstrate encouraging anti-leukemia activity of the pivekimab triplet in newly diagnosed AML, a disease in which long-term survival unfortunately remains limited,” said Naval Daver, MD, Associate Professor in the Department of Leukemia at The University of Texas MD Anderson Cancer Center. “The MRD negativity rates, which are indicative of a deep remission, are particularly promising in the treated patient population. This encouraging activity, along with a manageable safety profile, support the continued evaluation of this novel triplet in this setting.”

PIVEKIMAB SUNIRINE, A CD123-TARGETING ANTIBODY-DRUG CONJUGATE, IN COMBINATION WITH AZACITIDINE AND VENETOCLAX IN PATIENTS WITH NEWLY DIAGNOSED ACUTE MYELOID LEUKEMIA
Lead Author: Navel Daver, MD
Poster Session: 616 (Acute Myeloid Leukemias: Investigational Therapies, Excluding Transplantation and Cellular Immunotherapies: Poster II)
Date and Time: Sunday, December 10, 2023, 6:00-8:00 p.m. PT / 9:00-11:00 p.m. ET
Publication Number: 2906

In the open-label, multicenter, Phase 1b/2 study of pivekimab in combination with azacitidine and venetoclax in patients with ND CD123-positive AML, patients received the recommended Phase 2 dose of pivekimab at 0.045 mg/kg on day 7, azacitidine at 75 mg/m^2 daily on days 1-7, and venetoclax at up to 400 mg for at least 14 days or up to 28 days, based on cohort assignment, in a 28-day cycle. The primary endpoints are complete remission (CR) rate, composite CR rate (CCR [CR+CRh+CRp+CRi]), minimal residual disease (MRD) negativity rate, and duration of remission. Key secondary endpoints are safety, pharmacokinetics, and immunogenicity.

Key findings for 50 ND patients (n=25 per cohort) as of September 29, 2023 (data cut-off) include:

Anti-Leukemia Activity

- In the overall population, CCR rate was 68% (34/50), CR rate was 54% (27/50), and MRD negativity rate among evaluable patients achieving CCR was 76% (22/29). MRD was assessed centrally by flow cytometry with <0.1% considered negative. Response rates and MRD negativity were numerically comparable between cohorts 1 and 2, despite differences in the venetoclax schedule.
- In a post hoc subset analysis of patients unfit for intensive chemotherapy (i.e. patients >75 years of age, and/or with pre-specified comorbidities) (n=23), CCR rate was 78% (18/23), CR rate was 61% (14/23), and MRD negativity rate was 79% (11/14).
- In patients known to be TP53^{wt} (n=25), CCR rate was 88% (22/25), CR rate was 84% (21/25), and MRD negativity rate was 80% (16/20). CCR and MRD negativity rates, respectively, were high across other major molecular subsets, including:
    - FLT3 (ITD or TKD): 100% (6/6) and 100% (6/6)
    - IDH1 mutant: 100% (4/4) and 67% (2/3)
    - IDH2 mutant: 100% (6/6) and 83% (5/6)
    - NPM1 mutant: 100% (8/8) and 86% (6/7)
    - K/NRAS mutant: 50% (3/6) and 67% (2/3)
    - TP53 mutant: 50% (7/14) and 50% (3/6)
- Among all MRD negative patients, the median time to MRD negativity was 1.87 months (range: 0.79-5.16 months).
- Although follow-up duration was short (median 5.2 months), landmark overall survival estimate at 6 months is 86%.
- The study is continuing to enroll newly diagnosed unfit AML patients.

Safety

- The triplet displayed a manageable safety profile; no new safety signals were observed compared to previously reported data.

- The most common non-hematologic treatment-emergent adverse events (TEAEs) (all grades [grade 3+]) seen in ≥20% of all patients were constipation (48% [2%]), peripheral edema (44% [4%]), diarrhea (40% [2%]), hypophosphatemia (34% [2%]), nausea (32% [4%]), hypokalemia (28% [4%]), fatigue (24% [6%]), hypotension (24% [2%]), and pyrexia (24% [0%]). In the overall population:
    - Rates of cytopenias were similar to those observed with azacitidine and venetoclax, with a median neutrophil recovery to ≥500/μL and platelet recovery to ≥50,000/μL by day 34 and day 22, respectively.
    - No veno-occlusive disease, capillary leak syndrome, or sinusoidal obstruction syndrome were observed.
    - Infusion-related reactions (IRRs) occurred in 16% of patients (0 grade 3+ IRRs).
    - Discontinuations due to an adverse event (AE) were 4% (2 patients).
    - 30-day mortality was 0%.
    - 60-day mortality was 4% (2 patients; due to pneumonia and early disease progression).

"Building upon our initial findings in frontline AML presented last year, these data show broad and consistent response rates in a larger study population and across major molecular subsets of interest, including those patients with biological mutations making them high-risk," said Michael Vasconcelles, MD, ImmunoGen's Executive Vice President, Research, Development, and Medical Affairs. "We are pleased with the low early mortality and manageable safety profile observed, in particular the lack of prolonged cytopenias. We look forward to continuing to expand our cohort of newly diagnosed unfit patients to inform the development path for pivekimab in AML."

PRECLINICAL POSTERS
ImmunoGen is also presenting two preclinical posters at ASH.

Title: Venetoclax Synergizes with IMGN632, a Novel CD123-Targeting Antibody Conjugated to a DNA Alkylating Payload, By Suppressing DNA Damage Response and Potentiating Apoptosis in Acute Myeloid Leukemia in Vitro Models
Presenter: Anna Skwarska
Session: 604 (Molecular Pharmacology and Drug Resistance: Myeloid Neoplasms: Poster III)
Date and Time: Monday, December 11, 2023, 6:00-8:00 p.m. PT / 9:00-11:00 p.m. ET
Publication Number: 4155

Title: Spatial Response to Pivekimab Sunirine In Vivo in a BPDCN Model
Presenter: Margaux Poussard
Session: 604 (Molecular Pharmacology and Drug Resistance: Myeloid Neoplasms: Poster II)
Date and Time: Sunday, December 10, 2023, 6:00-8:00 p.m. PT / 9:00-11:00 p.m. ET
Publication Number: 2791

Additional information can be found at https://www.hematology.org, including abstracts.

ABOUT PIVEKIMAB SUNIRINE
Pivekimab sunirine is a CD123-targeting ADC in clinical development for hematological malignancies, including blastic plasmacytoid dendritic cell neoplasm (BPDCN), acute myeloid leukemia (AML), and other CD123+ hematologic malignancies. Pivekimab is currently being evaluated as monotherapy for patients with BPDCN and in combination with azacitidine (Vidaza®) and venetoclax (Venclexta®) for patients with untreated and relapsed/refractory AML. Pivekimab uses one of ImmunoGen's novel indolinobenzodiazepine (IGN) payloads, which alkylate DNA and cause single-strand breaks without crosslinking. IGNs are designed to have high potency against tumor cells, while demonstrating less toxicity to normal marrow progenitors than other DNA-targeting payloads. The European Medicines Agency (EMA) granted orphan drug designation to pivekimab for the treatment of BPDCN in June 2020. Pivekimab also holds this designation in the US. In October 2020, the FDA granted pivekimab Breakthrough Therapy designation in relapsed/refractory BPDCN.

ABOUT ACUTE MYELOID LEUKEMIA (AML)
AML is a cancer of the bone marrow cells that produce white blood cells. It causes the marrow to increasingly generate abnormal, immature white blood cells (blasts) that do not mature into effective infection-fighting cells. The blasts quickly fill the bone marrow, impacting the production of normal platelets and red blood cells. The resulting deficiencies in normal blood cells leave the patient vulnerable to infections, bleeding problems, and anemia. It is estimated that, in the US alone, more than 20,000 people will be diagnosed with AML and more than 11,000 will die from the disease this year.

ABOUT CD123
CD123, the interleukin-3 alpha chain, is expressed on multiple myeloid and lymphoid cancers including AML, BPDCN, ALL, chronic myeloid leukemia, and myeloproliferative neoplasms. With limited expression on normal hematopoietic cells, rapid internalization, and expression on AML leukemia stem cells, CD123 is a clinically validated therapeutic target.

ABOUT IMMUNOGEN
ImmunoGen is developing the next generation of antibody-drug conjugates (ADCs) to improve outcomes for cancer patients. By generating targeted therapies with enhanced anti-tumor activity and favorable tolerability profiles, we aim to disrupt the progression of cancer and offer our patients more good days. We call this our commitment to TARGET A BETTER NOW™.

Learn more about who we are, what we do, and how we do it at www.immunogen.com.

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FORWARD-LOOKING STATEMENTS
This press release includes forward-looking statements. These statements include, but are not limited to, the potential efficacy and safety of pivekimab. Various factors could cause ImmunoGen's actual results to differ materially from those discussed or implied in the forward-looking statements, and you are cautioned not to place undue reliance on these forward-looking statements, which are current only as of the date of this release. Factors that could cause future results to differ materially from such expectations include, but are not limited to: the timing and outcome of the Company's clinical development processes; the difficulties inherent in the development of novel pharmaceuticals, including uncertainties as to the

timing, expense, and results of clinical trials and regulatory processes; and other factors as set forth in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission on March 1, 2023, the Company's Quarterly Reports on Form 10-Q filed with the Securities and Exchange Commission on April 28, 2023 and July 31, 2023 and November 2, 2023, and other reports filed with the Securities and Exchange Commission. The forward-looking statements in this press release speak only as of the date of this press release. ImmunoGen undertakes no obligation to update any forward-looking statement, whether as a result of new information, future developments, or otherwise, except as may be required by applicable law.

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