EUROPEAN HEMATOLOGY ASSOCIATION
EHA2021 VIRTUAL

S192

# MAGNETISMM-1: PHASE 1 STUDY OF ELRANATAMAB (PF-06863135), A B-CELL MATURATION ANTIGEN (BCMA) TARGETED CD3-ENGAGING BISPECIFIC ANTIBODY, FOR PATIENTS WITH RELAPSED OR REFRACTORY MULTIPLE MYELOMA (MM)

Topic: 14. Myeloma and other monoclonal gammopathies - Clinical

Keywords: Immunotherapy, Multiple myeloma

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**Background:** Elranatamab (PF-06863135) is a humanized bispecific monoclonal antibody (IgG2a) that targets BCMA, a member of the tumor necrosis factor receptor superfamily expressed in MM, and CD3 on T cells. MagnetisMM-1 (ClinicalTrials.gov ID: NCT03269136) is a Phase 1 study of elranatamab designed to evaluate selective therapeutic targeting and activation of T cells re-directed against BCMA-expressing malignant plasma cells.

**Aims:** The aim of MagnetisMM-1 is to characterize the efficacy, safety, pharmacokinetics, and pharmacodynamics of elranatamab as a single agent and in combination with immunomodulatory agents for patients with relapsed or refractory MM.

**Methods:** Patients (pts) received single agent elranatamab at 80, 130, 215, 360, 600, and 1000µg/kg/week subcutaneously (SC). A modified toxicity probability interval method was used for escalation, with monitoring for dose-limiting toxicity (DLT) to end of the first cycle. Treatment-emergent adverse events (TEAEs) were graded by Common Terminology Criteria for Adverse Events (v4.03), and cytokine release syndrome (CRS) by American Society for Transplantation and Cellular Therapy criteria (Lee et al. Biol Blood Marrow Transplant. 2019;25:625). Response was assessed by International Myeloma Working Group criteria. Pharmacokinetics, cytokine profiling, and T cell immunophenotyping were performed.

**Results:** 30 pts had received elranatamab as of 4-Aug-2020 at 80 (n=6), 130 (n=4), 215 (n=4), 360 (n=4), 600 (n=6), or 1000 (n=6) µg/kg SC weekly. Pts had a median of 8 prior treatments; 87% had triple refractory disease,

97% had prior anti-CD38 therapy, and 23% had prior BCMA-directed antibody drug conjugate or chimeric antigen receptor T cell therapy. The most common all causality TEAEs included lymphopenia (n=24, 80%; 20% G3, 60% G4), CRS (n=22, 73%; none >G2), anemia (n=17, 57%; 43% G3, 3% G4), injection site reaction (n=16, 53%; none >G2), thrombocytopenia (n=16, 53%; 23% G3, 17% G4), and neutropenia (n=12, 40%; 17% G3, 17% G4). Both CRS and immune effector cell-associated neurotoxicity syndrome (n=6, 20%) were limited to ≤G2 with median durations of 2 and 1.5 days, respectively. No DLT was observed. Exposure increased with dose, and $T_{max}$ ranged from 3–7 days. Cytokine increases occurred with the first dose, and increased T-cell proliferation was observed in peripheral blood. The overall response rate (ORR) for doses ≥215µg/kg was 75% (n=15/20) including partial response (PR; n=6), very good PR (VGPR; n=3), complete response (CR; n=1), and stringent CR (sCR; n=5). Median time to response was 22 days, and 3 of 4 pts (75%) with prior BCMA-directed therapy achieved response (VGPR, n=2 and sCR, n=1). The recommended Phase 2 dose for single agent elranatamab is 1000 µg/kg SC weekly. Updated data, including duration of response, will be presented.

**Summary/Conclusion:** Elranatamab demonstrated a manageable safety profile and wide therapeutic index. Doses ≥215µg/kg SC achieved ORR of 75% with CR/sCR rate of 30%. These results demonstrate the safety and efficacy of elranatamab in this relapsed/refractory population, confirm the feasibility and potential of BCMA-directed immunotherapy for malignant plasma cell disorders, and support ongoing development of elranatamab for pts with MM.

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**Abstract Book Citations:** Authors, Title, HemaSphere, 2021;5:(S2):pages. Abstract Book, DOI:
http://dx.doi.org/10.1097/HS9.0000000000000566