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GLOBAL RESPONSE ASSESSMENT BY ADVANCED IMAGING AND MYELOMA LESION BIOPSIES DURING INDUCTION THERAPY OF MULTIPLE MYELOMA WITH CARFILZOMIB LENALIDOMIDE DEXAMETHASONE (CRD)

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Background: Despite multiple advances in the treatment multiple myeloma (MM) remains an incurable hematologic malignancy. MM is a multi-focal process with heterogeneous involvement of skeleton and/or soft tissues. Focal myeloma lesions identified by advanced imaging may be the sanctuary sites of residual disease after treatment. In this study author systematically evaluate response by using whole body MRI (WB-MRI) and guided myeloma lesion biopsies to optimize assessment of response. They hypothesize that response assessment with WB-MRI and myeloma lesion biopsy will increase the detection rate of residual/refractory disease by about 20%, as compared with standard response evaluation.

Methods: This is a prospective single arm study for patients with newly diagnosed MM. All patients undergo a standard bone marrow (BM) biopsy, skeletal survey, WB-MRI and guided myeloma lesion biopsy at study entry. All patients receive an induction therapy with four cycles of carfilzomib, lenalidomide and dexamethasone (CRD) regimen. After completion of induction, all patients undergo MM response assessment using standard methods, as well as with repeat WB-MRI and guided biopsy of any residual MM lesions. They anticipate enrolling 35 patients on this study. Preliminary data from interim analysis of the study are presented.

Results: To date, eight subjects have been enrolled. Three subjects have completed treatment and all of them have achieved very good partial response (VGPR) or better. Of note, complete responses as assessed by WB-MRI and lesion biopsies have been observed. Thus far, at study entry 50% of patients are identified to have differential findings in morphology, cytogenetics and FISH when BM biopsies versus guided lesion biopsies are compared.

Conclusion: They expect this method of response assessment with advanced imaging and myeloma lesion biopsy will lead to improved response assessment in MM. This approach will help identify patients with large residual disease burden and this in turn will lead to better risk-stratification of patients prior to autologous stem cell transplant.

BIOGRAPHY

Natalia Neparidze obtained Medical Degree from AIETI Medical School in Tbilisi, Georgia; subsequently completed Postdoctoral Research Fellowships at Emory, North western and Yale Universities, followed Residency and Hematology/Medical Oncology Fellowship at Yale University. She has served as an Assistant Professor at Yale University School of Medicine since 2012 with research focus on multiple myeloma. Her work has been widely published in peer-reviewed journals. She serves as a principal investigator on multiple clinical trials in myeloma.

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