Circulating plasma cells predict the outcome of relapsed or refractory multiple myeloma (RR MM)

Pecelisunas Valdas MD1,2, Janiulioniene Ausra MD1, Matuzeviene Reda MD PhD1,2, Tadas Zvirblis1, Griskevicius Laimonas MD PhD1,2
1 – Vilnius University Hospital Santariskiu Clinics, Vilnius, Lithuania.
2 – Faculty of Medicine, Vilnius University, Vilnius, Lithuania.

BACKGROUND

Pretreatment detection of peripheral blood malignant circulating plasma cells (CPCs) by immunophenotyping has been shown to be of negative prognostic value in MM and related disorders (1-3). The number of CPCs tends to decrease in response to treatment (4). We hypothesized that assessment of CPC kinetics in response to one therapy cycle may be of prognostic significance and could be helpful in the early detection of MM refractoriness to treatment.

RESULTS

42 patients with refractory or relapsed RR MM were enrolled. 39 patients were treated with bortezomib containing regimen, three patients received VAD (vincristine, doxorubicin and dexamethasone). All patients provided informed consent. We used six-color flow cytometry to identify immunophenotypically normal (nCPC) and aberrant plasma cell (aCPC) subsets in peripheral blood (PB). Assays were performed with two tubes stained with antibody combinations: CD38/CD138/CD45/CD19/CD38/CD20 and cKappa/cLambda/CD138/CD19/CD38/CD56. Plasma cells were identified as normal (nCPCs) if they were CD138+/CD38+/CD19+/CD56-/normal kappa/lambda ratio/CD45 variable or aberrant (aCPCs) if they displayed CD138+/CD38+/CD19+/CD56+/abnormal kappa/lambda ratio/CD45 variable (5,6). We measured aCPC and nCPC subsets immediately before and then after one therapy cycle in RR MM patients.

CONCLUSIONS

Detection of aCPCs in PB before treatment may identify patients with more aggressive disease. Nonreduction of aCPCs in RR MM patients after the first cycle of therapy may be useful to identify resistant patients early who may be candidates for immediate switch to alternative therapy.

REFERENCES