Some immunophenotypic markers in patients from the Gomel region with monoclonal gammopathy and multiple myeloma as a possible prognosis factor

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Keywords

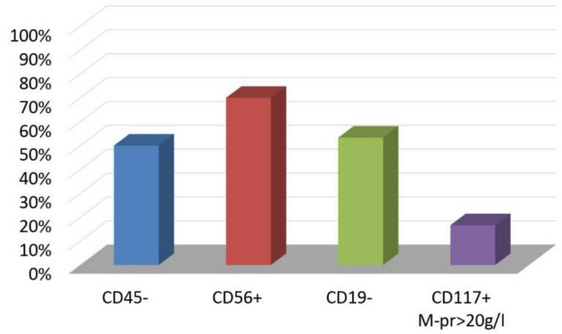
Monoclonal gammopathy of undetermined significance (MGUS), multiple myeloma (MM), immunophenotypic markers.

Introduction

MGUS - is a premalignancy with a risk of 1% per year transformation into MM or other lymphoid proliferation. Immunophenotyping is one of the modern methods used in the diagnosis of MGUS and MM.

Objective

To identify immunophenotypic markers that are significant in MM and MGUS.



Materials & Methods

The study included 126 patients (30 patients with MGUS and 96 patients with MM), for the period of 2014-2017 in Gomel (Belarus). The results were estimated at the time of diagnosis. The number of clonal plasma cells in the bone marrow in patients with MGUS averaged 4,6% (1,2-15,0%), in patients with multiple myeloma 44% (20,8-88,0%). MGUS and MM were more common in women (64,3 % and 60 %, respectively). The median age was 60 years with MGUS and 63 years with MM.

Results

At the time of MGUS diagnosis there was revealed a significant increase in CD56 expression in 21 (75%) patients. In 16 patients (53,3%), the loss of marker CD19 was observed. In 15 patients (50%), a negative phenotype by CD45 was detected. During the three-year follow-up, 11 of 30 (36,6%) patients with MGUS (with the presence of IgG, Bens-Jones protein in the urine, increased expression of CD56, lack of expression of CD19, CD45 and CD27) progressed to multiple myeloma. In two patients from the study group, along with a high level of pathological M-protein (>20 g/l) a significant increase in CD117 expression was detected (p=0,05). In one patient, the disease was transformed into Waldenstrom's disease. During this this time there was revealed a significant increase in CD20 expression, correspondingly an increase in the M -protein index.

At the first time diagnosed MM in the bone marrow, there was most often found expression of tumor marker CD56 (in 74,1% of cases). In a smaller amount, there were detected CD117 expression (44% of cases), CD33 (28% of cases), CD20 (35,3% of cases).

The lowest overall survival was found in patients with high expression CD56 (p=0,057 Gehan's Wilcoxon Test). In patients with high CD20 expression, overall survival was lower than in patients without this marker and the presence of multiple soft-tissue components was present in the clinic. At the same time, the frequency of remission after 3 courses of VAD did not depend on the predominant presence of immunophenotypic markers CD56 (p=0,418), CD33 (p=0,471), CD20 (p=0,151), CD117 (p=0,689 Fisher Exact Test).

Conclusion

The features of the immunophenotype of tumor cells can provide additional information on the nature of the tumor clone in a particular patient, which can be considered as an additional factor for individualizing therapy.