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MYELODISPLASTIC SYNDROMES: IMMUNOPHENOTYPIC FEATURES OF CD34 NEGATIVE BONE MARROW CELLS FROM DIFFERENT HEMATOPOIETIC LINEAGES

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Introduction: Myelodisplastic syndromes (MDS) are a heterogeneous group of clonal disorders that affect hematopoietic stem cells and are characterized by morphologic dysplasia, genetic, functional and immunophenotypic alterations presented by different hematopoietic cell lineages.

Aim: Identify maturation-associated immunophenotypic abnormalities of different hematopoietic lineages CD34- bone marrow cells.

Material and methods: We studied 65 MDS patients, that were grouped according to the WHO classification as 3 RA, 36 RCMD, 12 RAEB I, 4 RAEB II, 2 5q- and 8 MDS-U; and as 50 MDS low risk and intermedium I and 6 intermedium II and high risk, according to the IPSS. We also studied 18 individuals without haematological disorders (control group). Immunophenotypic abnormalities analysis in neutrophils, monocytes, eosinophils, basophils, eritroblasts and lymphoid dendritic bone marrow cells were carried out using a predifined 4-colour flow cytometry protocol foracute myeloblastic leukemiaand MDS diagnosis.

Results: We identified maturation arrest in neutrophils (based on the combined expression of CD11b/CD13, CD15/CD16/CD10 and CD64); in monocytes (CD36/CD64/CD14) and eosinophils (CD11b/CD13/CD45), these alterations were presented in higher frequencies in RAEB II, RAEB I and RCDM.

RAEB II showed a higher number of altered hematopoietic lineages (4,5 ± 0,6) and a higher number of abnormalities affecting each lineage. The same was observed in high risk and intermedium II (3,8 ± 0,4 affected lineages), when compared to low risk and intermedium I (3,4 ± 0,9).

The most frequent phenotypic alteration for all groups studied were the decreased expression of CD16 and CD10 and the increase of CD45 (at the final maturation stage), CD65 and CD64 in neutrophils; the increase of CD64, CD15, CD33 and CD65 in monocytes; the increase of CD36 and decrease of CD71 in eritroblasts; the increased expression of CD15 in eosinophils, and the decreased expression of CD123 in basophils.

Conclusion: From the study of CD34- bone marrow cells in different maturative stages we observed a correlation between the number of affected hematopoietic lineages, as well as the number of abnormalities affecting each lineage, and the WHO classification and IPSS.

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