HEMATOPOIETIC PROGENITOR CELLS OF PLACENTAL AND UMBILICAL CORD BLOOD: IMMUNOPHENOTYPIC ANALYSIS AND DIFFERENTIATION POTENTIAL  in vitro

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The aim of the work was the comparative study of the character of differentiation of hematopoietic progenitor cells of the placenta and umbilical cord blood *in vivo* and their multipotent properties *in vitro*. The proposed methods were used for mononuclear cells isolation from umbilical cord blood, placental tissue and mature fetal chorion, of flow cytometry and of analysis of the potential for differentiation. We found that majority of hematopoietic progenitor cells both in mature placenta and umbilical cord blood remains uncommitted, however in placental tissue we found more amount of differentiated cells that include myeloid progenitor with a phenotype $CD34^+CD45^{low}CD33^+SSC^{low}$, later myeloid progenitors with a phenotype $CD34^+CD45^{low}CD14^+SSC^{low}$ (their content is significantly higher than in cord blood), erythroid progenitors with a phenotype $CD34^+CD45^{low}CD235^+SSC^{low}$ (their number significantly above than that in cord blood), B-lymphoid progenitors with a phenotype $CD34^+CD45^{low}CD19^+SSC^{low}$.
low

, T-lymphoid progenitors and Natural Killer Cells-progenitors with a phenotype CD34 
+ CD45 
low 
CD7 
+ 
SSC 
low 
, and also T-lymphocytes at the different stages of maturation with a phenotypes CD7 
+ CD45 
+ and CD7 
+ CD45RA 
+ CD45 
+ respectively. Placental hematopoietic progenitor cells have similar potential for differentiation in vitro in comparison with cord blood ones. Presence of hematopoietic cells in placental tissue at different stages and lines of differentiation suggests that the placental hematopoiesis last during all term of gestation.

Key words: placental hematopoiesis, hematopoietic progenitor cells.

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