# Immunophenotype of blood plasmacytoid dendritic cells in patients with systemic lupus erythematosus

Andrei Y. Hancharou[1], Konstantin A. Chyzh[2], Leonid P. Titov[1], Nikolay F. Soroka[2]

[1] Research Institute for Epidemiology and Microbiology, Minsk, Belarus
[2] Belarusian State Medical University, Minsk, Belarus

**Rationale** The function of dendritic cells may be critical for maintenance of inflammation in system lupus erythematosus (SLE) and may correlate with SLE complications, such as lupus nephritis. The aim of the current investigation was to assess the expression of costimulatory and adhesive molecules on plasmacytoid dendritic cells (pDC) derived from blood of patients with systemic lupus erythematosus (SLE).

**Methods** Blood from patients with SLE (n=14), patients with SLE and lupus nephritis (LN) (n=15) and healthy controls (C) (n=16) matched by age were assayed for pDC counts and immunophenotype. Cell phenotyping was performed on "FACSCalibur" cytometer using monoclonal antibodies to CD80, CD86, CD40, CD54, CD123, CD11c, HLA-DR, CD3, CD19, and CD14.

**Results** The decrease of the absolute pDC count in the blood of patients with SLE was shown (SLE+LN – 0.013 (0.004–0.027)%, SLE – 0.0145 (0.006–0.027)%, C – 0.026 (0.013–0.045)%, p=0.016 and 0.024 correspondingly). pDC from SLE patients were characterized by increased expression of CD86 and CD54, therefore capable of maintaining the immunoinflammation. No differences in pDC count and immunophenotype between patients with SLE and patients with SLE and LN were observed. Further investigation of gene expression by pDC derived from both groups of patients using DNA-microarray is required to estimate its role in the immunopathogenesis of SLE and LN.

**Conclusions**Decrease in absolute blood pDC counts in SLE patients suggests accelerated migration of DC into peripheral tissues and inflammation sites. Increased intensity of CD80, CD86 and CD54 expression by pDC is consistent with their role in maintaining inflammation.