A63 **ANALYSIS OF MONONUCLEAR CELL SUBSETS IN DERMIS AND BLOOD OF PATIENTS WITH SYSTEMIC SCLEROSIS BY MULTICOLOUR FLOW CYTOMETRY**

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Background Inflammation is a predominant feature in the early phase of systemic sclerosis (SSc) and putatively an important driver of fibrogenesis. Little is known about the homeostasis of monocytes, dendritic cells (DC), macrophages and lymphocytes in SSc skin and blood.

Methods Multicolour flow cytometry of dermis and peripheral blood in seven patients with SSc and dermis of one healthy control. After digestion of the skin in dispase and collagenase, cells were stained for CD45, human leukocyte antigen DR (HLA-DR), CD14, CD16 and CD1a. Lymphocytes were identified as CD45+HLA-DR-SC/FClow/SClow, macrophages were identified by auto-fluorescence (AF). Dermal DC were divided in CD45+DR+AF-CD1a+ (Langerhans) or CD45+DR+AF-CD14+ subsets. Whole blood was stained

for CD45, HLA-DR, CD14, CD16, CD11c, CD3, CD8, CD4, CD56 and CD19.

Results In patients with diffuse SSc (4), the dermal cell infiltration was predominantly lymphocytic (46.4%/CD45+). Lymphocyte infiltration of all subsets correlated with the modified Rodnan skin score ($p=0.004$). In limited SSc patients (3), dermal CD45+DR+AF-CD1a+ cells were higher than in diffuse SSc (2% vs 0.55%/CD45+) and the control (0.6%). In diffuse SSc blood, we observed increased numbers of CD45+DR+Lin-CD14+16- (24.4% vs 9.8%/CD45+ in the control) and CD45+DR+Lin-CD14-16+ (3% vs 0.95%/CD45+) monocyte subsets per CD45+ cells and reduced absolute numbers of CD16+CD56+ natural killer cells in all subsets (206/ μ l vs 323/ μ l). CD45+DR+Lin-CD11c+ DC were not increased.

Conclusion Multicolour flow cytometry of the dermis is an important new tool in SSc research. We found that lymphocytes are the predominant infiltrating cell type in diffuse SSc dermis whereas CD1a+ DC are increased in limited SSc. In the peripheral blood, monocyte subsets are increased in diffuse SSc and NK-cells are reduced in all subsets.