

Wednesday, September 11, 2019

LSC 3 | 1:00 - 2:00PM



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Research

“Neutrophils, stress and sickle cell disease”

Real-time intravital microscopy analyses in humanized models of sickle cell disease have revealed a prominent role for neutrophils in mediating vaso-occlusive episodes (VOE). Further studies show that neutrophils recruited in inflamed venules are functionally heterogenous. For example, only a subset of adherent neutrophils is capable of capturing free-flowing red blood cells (RBCs). Our recent studies show that neutrophil heterogeneity is dictated at least in part by the leukocyte's age. Older neutrophils that have spent more time in the circulation exhibit increased pro-inflammatory properties (e.g. adhesion, neutrophil extracellular trap formation, capacity to capture RBCs). The aging of neutrophils is regulated by the microbiota in that it is delayed in germ-free mice or animals treated with broad-spectrum antibiotics. We will present data and discuss the mechanisms by which this paradigm also applies to VOEs induced by psychogenic stress.

Live Online Seminar Viewing:
<https://tinyurl.com/CBRseminar>