

Heligmosomoides polygyrus infection influences angiogenesis in mice central nervous system

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During infection helminths induce tissue inflammation and local enhance of angiogenesis is observed. It was proven that *Schistosoma mansoni* live and homogenized eggs or its excretory/secretory products stimulate the proliferation of host endothelial cells. *Caenorhabditis elegans* generates a biologically active vascular endothelial growth factor (VEGF) like ligand, that induces angiogenesis. L4 stage of intestinal nematode – *Heligmosomoides polygyrus* L4 stage enhances VEGF and promotes blood-brain barrier permeability in brain of EAE mice. These results indicated that angiogenic factors induced by parasite can reach mice central nervous system.

The aim of the study was to evaluate the influence of *H. polygyrus* infection on angiogenesis in central nervous system in $C_{57}Bl_{6J}$ mice.

To examine the angiogenic and angiostatic protein expression in cerebrospinal fluid of *H. polygyrus* infected mice we used EliSpot method. For CD31, a surface marker expressed on endothelial cells which is involved in cell migration and angiogenesis, Immunofluorescence Staining was used.

Levels of CD31 and Proliferin, Prolactin, Cellular Communication Network Factor 3 and Stromal Cell-Derived Factor 1 were significantly higher in CNS of infected mice compared to control individuals.

Therefore, our data demonstrate that intestinal nematode infection is associated with elevated levels of angiogenic factors in CNS.

The project was supported by the Ministry of Science and Higher Education through the Military Institute of Hygiene and Epidemiology, Young Scientist Grant, Information No. 4562/E- 290/M/2018.