Abstract

Title: Clearance of Malaria parasite in Spleen and various host cell interaction with the parasite in the spleen micro-environment

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Abstract: (limit to 250 words) Spleen is an important organ required for various functions in the body like filtering of the blood by removing senscent and rigid red blood cells. It also acts as a major site to clear infected red blood cells and mount an effective immune response by residential macrophages. The white pulp of the spleen harbours the immune cells which are responsible for clearing iRBC’s and the red pulp is responsible for mechanical clearing of blood cells by slow microcirculation. It has been shown few decades ago that spleen is an important organ in containing the rodent malaria parasite *P.Yoeli 17.1.1* avirulent form compared to virulent form of *P. Yoeli YM*. During the infection with avirulent *P.Yoeli 17.1.1*, spleen undergoes gross morphological changes leading to the formation of barrier cells which then clears the blood with infected parasites. After an initial peak in infection, the infected mice are able to control the malaria infection and to survive with a spleenomegalay which also recovers with time. The question we are addressing is what are the molecular mechanisms of the clearance of 17.1.1 strain compared to that of virulent YM strain in the mouse. Our approach includes mainly live intravital imaging to see the dynamic process of parasite entry into spleen and its modifications in the spleen microenvironment using fluorescently labelled parasites. Along with this histopathology of spleen samples, processed at various time points post infection, give an insight into the spleen morphology. All the above approaches would give an in-depth knowledge of spleen as a major organ in malaria pathology.