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Prolongation of cardiac allograft survival by recombinant SAG1 of *Toxoplasma gondii* is associated with up regulation of CD4+CD25+Foxp3+ regulatory T cells

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Cardiac transplantation has been widely accepted as treatment of choice for end-stage heart failure, but organ survival is limited by immune rejection and side effects of traditional immunosuppressants. Therefore, there is an urgent need to develop novel immunosuppressants with few side effects and strong immuosuppression. Several studies show that *Toxoplasma gondii* infection and administration of soluble tachyzoite antigens (STAg) of *T. gondii* before transplantation can prolong cardiac allograft survival. However, the effective antigens inducing the protective effects on cardiac allograft are still unclear. In the present study, recombinant surface antigen 1 (rSAG1) , one of the major components in STAg was prepared and injected at 4 d before transplatation. Its effect on cardiac allograft survival was investigated in a mouse model. Moreover, the influence of CD4+CD25+Foxp3+ regulatory T cells (Treg) caused by rSAG1 in the recipient was explored. The results showed that administration of rSAG1 could prolong cardiac graft survival associated with an increased Treg population in splenocytes. This effect coincided with low expression of IFN-γ, IL-4 and IL-17 while increased production of IL-10, TGF-β and IL-12 by splenocytes in the experiment group. Depletion of Treg abrogated the prolonged allograft survival induced by rSAG1 and this effect was associated with decreased expansion of Treg, along with higher levels of IFN-γ, IL-12 and IL-17 and lower levels of IL-4, IL-10 and TGF-β produced by spenocytes. These data suggest that exposure to rSAG1 before cardiac transplantion may induce prolonged allografts survival, which is related to upregulation of CD4+CD25+Foxp3+ regulatory T cells.

Biography

Jiahui Lei has completed her PhD from Tongji Medical College, Huazhong University of Science and Technology. She is an Associated Professor from Department of Parasitology. She has published more than 15 papers in reputed journals and her main research fields are interaction between parasite infection and host and immunological diagnosis of parasite infection.

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