Intact Ovine Immunoglobulin (EBOTAb) to Treat Ebola Virus Infection?

Researchers have now developed EBOTAb, a pool of intact ovine immunoglobulin G, which has been shown to neutralize Ebola virus (EBOV) in vitro. The primary target was the highly glycosylated spike of EBOV (EBOV-$GP_{1,2}$). A protein:adjuvant mixture was injected subcutaneously and equally into 6 injections sites in all sheep and reimmunization was at 28 day intervals.

In the present study published in the Journal of Infectious Diseases, the team of researchers assayed ovine-derived EBOTAb's neutralizing activity in female adult guinea pigs. When EBOTAb was administered 6 hours post EBOV-challenge all animals survived without fever or other clinical manifestations. However, a delay in administration for 48 or 72 hours after the EBOV-challenge resulted in 100% and 75% survival respectively. The assays further demonstrated that EBOTAb is able to neutralize two variants of EBOV: Mayinga and Makona-Gueckedou-C07. The latter is the currently circulating species of EBOV.

The EBOTAb regimen is cost effective and the next step is to isolate specific polyclonal antibodies from the pool of IgG sera so as to define its efficacy and optimize potential levels for clinical use to combat the emergence of the highly pathogenic virus especially in the developing world.

Dowall, S. et al, 2016. Development of a Cost-effective Ovine Polyclonal Antibody-Based Product, EBOTAb, to Treat Ebola Virus Infection. *The Journal of Infectious Diseases*.