The effects of horse anti-bovine lymphocyte sera (ABLS) in calves have been studied. Forty, 4 - 6 months old calves including the controls of the Dutch Friesian breed were used in these experiments. The ABLS treated calves received a maximum of ten subcutaneous injections of 1 ml ABLS per kg of body weight at one day intervals. It was found that ABLS rapidly decreased the number of lymphocytes and that it transiently increased the number of neutrophils. It also caused eosinophilia. The histological alterations in animals that succumbed to high doses of ABLS (7.5 - 10 ml per kg body weight) were most severe in the lymph nodes and consisted of a marked follicular germinal center reaction, follicular necrosis, reduction in the number of follicles and depletion of lymphocytes in the cortical and paracortical areas. There was also histioreticular proliferations, eosinophilic accumulations and fibrosis. The alterations in the spleen were the same as in the lymph nodes, but less severe. Congestion and tubular degenerations were common in the kidneys. In the lungs there was severe pneumonia. In the small and large intestines the submucosal haemorrhages, congestion, edema and infiltrations of mononuclear cells, neutrophils, eosinophils and plasma cells were impressive. It was concluded that the cause of death of the overdosed animals was due to shock by severe
intestinal bleeding and pneumonia by secondary infection.

ABLS suppressed the humoral immune response to sheep red blood cells and tetanus toxoid. There was also an inhibition of the cellular immune response, which was evidenced by the suppression of the delayed hypersensitivity skin tuberculin reaction and prolongation of skin graft survival.

ABLS injections into calves caused the calf's lymphocytes to become insensitive to phytohaemagglutinin (PHA) and pokeweed mitogen (PWM) in in vitro stimulation. It was also observed that ABLS reduced the number of B and T lymphocytes.

The horse ABLS disturbed the B and T cell functions in the experimental calves.