

STUDIES ON COMPLEMENT CHANGES AND FIBRINOLYSIS/
FIBRINOGENOLYSIS IN THEILERIA PARVA INFECTIONS OF
CATTLE (EAST COAST FEVER).

By

VENNY MARY SHITAKHA, B.Sc.

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SUMARRY

In Theileria parva-infected cattle, massive pulmonary oedema and widespread sub-endothelial haemorrhages as well as lymphocytolysis are common findings. The pathophysiologic mechanisms which underlie these lesions have not been elucidated. These manifestations, however, could result from disseminated intravascular coagulation and fibrinolysis syndrome, associated with complement activation. Such a pathophysiologic mechanism has been proposed for malaria whose clinical manifestations have a striking resemblance to East Coast fever (ECF). Studies reported in this thesis were, therefore, carried out to determine the role played by complement and fibrinolysis/fibrinogenolysis in the pathogenesis of ECF.

The results show that there was a marked reduction in total haemolytic complement in cattle that died of ECF whereas the survivors showed only transient changes. There was also a reduction in the levels of the third complement component (C3) in these animals. The degree of reduction in C3 levels in cattle with severe disease, however, was equivalent to that in the survivors. In addition

to the complement changes, high levels of fibrinogen and fibrin degradation products (FDPs) were detected in sera from the infected animals. The rate of production of FDPs and reduction in total haemolytic complement paralleled the clinical course of the disease.

The drop in complement levels and production of FDPs together indicate that complement activation and degradation of fibrinogen and fibrin occur in this disease. (It is, therefore, suggested that the direct inflammatory and vasoactive effects of the split products of complement (C3a and C5a) may be responsible for the massive pulmonary oedema while the consumption of fibrinogen and fibrin could lead to the disseminated, sub-endothelial petechial haemorrhages seen in ECF.

Publication

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