VIRAL HAEMORRHAGIC DISEASE OF RABBITS: A PATHOGENETIC HYPOTHESIS

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Viral haemorrhagic disease (VHD) is a highly infectious and severe pathologic condition of rabbits first reported in China under the term viral haemorrhagic pneumonia (VHP) *(3, 5, 7, 10)*. A similar disease has also been observed since over 3 years in Italy *(1)*, where it has been referred to as infectious necrotic hepatitis of rabbits (INHR) *(4)*.

Although the viral aetiology of the disease has been demonstrated *(4, 5, 7)*, its exact pathogenesis has to be determined. Necrotic hepatitis, lymphoid tissue necrosis of the spleen, thymus and mesenteric lymph nodes, along with disseminated intravascular coagulation (DIC) have all been reported to occur as primary virus-induced lesions *(4, 10)*, whereas haemorrhagic and nephrotic alterations have been hypothesized to occur secondarily *(4)*. Severe haemorrhagic multicentric lesions have been suggested to occur due to the diffuse virus-induced hepatic damage, resulting in turn, in a dramatic rise of coagulation factors in the blood caused by massive lysis of hepatocytes. Consequently, an overconsumption of above-mentioned factors would occur, but a primary disturbance in their synthesis has also been hypothesized *(4)*.

In this respect, it is to be underlined that a diffuse lymphocytic lysis in different immunocompetent tissues such as spleen, thymus and mesenteric lymph nodes also represents a constant pathological feature of VHD. As a result, a massive mobilization of colony stimulating factors (CSF) and lymphokines such as tumour necrosis factor-beta (TNF-ß), both actively produced by lymphoid cells *(6, 11)*, could be assumed. The remarkable granulocytic hyperplasia in the bone marrow *(4)* seems to be explained by the former event, whereas the alter one could explain the occurence of both DIC and multifocal haemorrhagic lesions. As a matter of fact, TNF has been shown to induce active production of thrombin on the endothelial cell surface *(8)* and also to exert an evident haemorrhagic effect both *in vivo* and *in vitro (2,9)*. To my knowledge, no study aiming at the evaluation of circulating levels of these mediators in VHD-positive and control subjects has been carried out up to date. This would be of great concern not only in view of a clear definition of the disease pathogenesis, but also of an active immunization perspective.

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