

L.1.- Current status of TSE related problems

E. Thiry¹, C. Saegerman², L. Xambeu³, J. Penders⁴

¹*Virology-Epidemiology, Department of infectious and parasitic diseases, Faculty of veterinary Medicine, University of Liège, B-4000 Liège, etienne.thiry@ulg.ac.be*

²*Federal agency for the safety of the food chain, scientific secretariat, B-1000 Brussels, claude.saegerman@afsca.be*

³*Virology-Epidemiology, Department of infectious and parasitic diseases, Faculty of veterinary Medicine, University of Liège, B-4000 Liège, laurence.xambeu@ulg.ac.be*

⁴*idem, j.penders@student.ulg.ac.be*

Transmissible spongiform encephalopathies (TSE) encompass subacute neurological degenerative diseases for which the prototypes are scrapie in sheep and some forms of Creutzfeldt-Jakob disease in man. The emergence of a new form of TSE in cattle in Great Britain since 1986, namely bovine spongiform encephalopathy (BSE), sharply increased the interest for these diseases, especially because of the epidemic nature of BSE in Great Britain and the later discovery of its zoonotic character.

The number of measures of veterinary public health taken to control the disease and to prevent its spread to animals and human beings increased in time and culminated by the total feed ban. Indeed, since the beginning of 2001, feed containing proteins of animal origin is prohibited for the feeding of production animals, including ruminants and monogastric species.

The effect of the total feed ban needs to be evaluated. The incidence of BSE has a trend to decrease in Great Britain and the other European member states. However, as it is a rare event distributed in a large bovine population, it is difficult to state unambiguously whether this trend is significant. Furthermore, the evaluation of this measure will be only effective at least five years after its introduction, since this period is the mean incubation time of BSE.

The main concern is currently the eradication of BSE in the infected countries. Additionally, the control of scrapie is also carried out due to the possible contamination of sheep with the BSE agent. These actions must take into account several new facts: the recent discovery of BSE cases in countries with a low geographical risk as Japan, Canada and United States of America (USA); the identification of cases in young cattle in Japan; the growing incidence of chronic wasting disease, a spongiform encephalopathy observed in deer in USA; the characterization of a new pattern of bovine amyloidotic spongiform encephalopathy in Italy and atypical scrapie and BSE cases in Europe; the efficacy of sheep selection based on scrapie resistant genotypes.

TSEs are still emerging diseases. Although the scientific knowledge is steadily increasing, many aspects of the pathogenesis and the epidemiology of these diseases remain to be elucidated. However, efficient control measures were enforced in most of the European member states. Every measure which can improve the quality and the respect of the feed ban is a step towards eradication of BSE in cattle.

Keywords

Transmissible spongiform encephalopathy, prion, scrapie, bovine, sheep